The Need For Rail Passenger Service and Opportunities for Modal Substitution

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The Need for Rail Passenger Service and Opportunities for Modal Substitution

by
Adil Cubukgil and Richard M. Soberman
University of Toronto-York University
Joint Program in Transportation

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FOREWORD

The Research Branch is pleased to issue this report "The Need for Rail Passenger Service and Opportunities for Modal Substitution" by Adil Cubukgil and Richard Soberman of the University of Toronto/York University Joint Program in Transportation. It is hoped that this substantial body of analysis will significantly enhance understanding of the underlying economics of different elements of Canada's railway passenger system.

The body of the report is a detailed examination of each individual service by class of service from the perspective of possible modal substitutions, cost reductions and revenue increases. It should provide an important reference for a serious student of the complex railway passenger policy issues that face the nation.

Opinions expressed herein are those of the authors and do not necessarily reflect the views of the Research Branch or the Canadian Transport Commission.

Richard W. Lake
Executive Director
Research Branch

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Table of Contents

		Page
Summary		ix
1.	The Changing Policy Environment	1
1.1	Introduction	1
1.2	Recent Appraisals of Rail Passenger Service	3
1.3	Defining Need	6
2.	An Overview of the Intercity Passenger System	11
2.1	Introduction	11
2.2	Existing Rail Passenger Services	11
2.3	Competing Services	18
2.4	Conceptual Approach	21
3.	Quebec City-Windsor Corridor	27
3.1	Introduction	27
3.2	Rail Service Characteristics	28
	Quebec City-Montreal	28
	Montreal-Ottawa	30
	Ottawa-Toronto	30
	Montreal-Toronto	31
	Toronto-Windsor	31
	Toronto-Sarnia	31
	Toronto-London	32
	Toronto-Niagara Falls	32
3.3	Financial Performance of Rail	33
3.4	Bus and Air Service Characteristics	43
	Quebec City-Montreal	43
	Montreal-Ottawa	43
	Ottawa-Toronto	45
	Montreal-Toronto	45
	Toronto-Windsor	46
	Toronto-Sarnia	47
	Toronto-London	47
	Toronto-Niagara Falls	48
3.5	Comparison of Modal Alternatives	48
4.	Atlantic Canada	53
4.1	Introduction	53
4.2	Service Characteristics	53
	Halifax-Sydney	55
	Halifax-Yarmouth	57
	Halifax-St. John	58
	Moncton-Campbellton	59
	Moncton-Edmundston	60
4.3	Financial Performance of Rail	61
4.4	Modal Comparisons	69

		Page
5.	Transcontinental Services	73
	5.1 Introduction	73
	5.2 Service Characteristics	74
	5.3 Financial Performance	76
	5.4 Potential Improvements	81
6.	Remote and Other Regional Services	85
	6.1 Introduction	85
	6.2 Northern Quebec	88
	6.3 Northern Ontario	90
	6.4 Northern Manitoba	94
	6.5 Other Services	96
	Edmonton-Prince Rupert	96
	Gaspe-Matapaedia	97
	Victoria-Courtenay	99
7.	Implications of the Proposed Rail Passenger Legislation	101
	7.1 Introduction	101
	7.2 Future Needs	102
	7.3 Subsidy Implications	110
	7.4 Conclusions	118

Summary

All rail passenger service in Canada receives large subsidies from the federal government to offset the difference between costs and revenues. Traditionally, subsidies for rail passenger service have been justified by successive governments because of the need to serve remote communities which are highly disadvantaged from the standpoint of transportation and because of presumed public support for the maintenance of transcontinental rail service for the promotion of tourism and as a stimulus to national unity.

In many other cases, however, communities that receive highly subsidized rail passenger service also have access to a wide variety of bus and airline services which, in comparative terms, operate with little or no federal government subsidy. In 1984, corridor and regional services accounted for approximately $208 million of the $474 million paid by the federal government to VIA Rail for the operation of the rail passenger system.

These corridor and regional services are the principal focus of the present study which attempts to develop an approach for assessing public need for rail passenger service in communities that are also served by other modes of transportation. Defining public need has never been an easy task. In some cases, there is a perceived need simply because the service is there, whereas in other cases, some need is perceived simply because strong lobby groups prefer rail to other modes. It is only in a very limited number of cases that need for rail passenger service is based on the absence of any other form of public transportation.

Recently introduced rail passenger legislation does attempt to define need in more quantitative terms, by differentiating among the various types of services provided and by establishing targets for financial performance based on these distinctions among different needs. The proposed legislation also establishes a maximum limit for total rail passenger subsidies as an attempt to introduce, for the first time, some financial discipline on the operations of the national rail passenger system.

Chapter 2 of the study presents an overview of the intercity passenger system by describing the existing rail passenger network and comparing the availability of bus and air services on routes now served by VIA Rail. For those origin-destinations where there is some degree of competition among the various rail, bus, and airline services, a conceptual approach is suggested for assessing need in which level of service attributes such as schedule frequency, travel time, and fares are compared for the different modes of intercity passenger travel.

Chapters 3 through 6 then examine the various classes of rail passenger service from the standpoint of possibilities for cost reductions, revenue increases, and modal substitutions. For example, the analysis of Chapter 3 shows that the current financial performance of corridor services is very poor, but that there are opportunities for significant improvements that could lead to full cost recovery through various combinations of cost reductions, fare increases, and service changes.

Chapter 4 deals with regional services in Atlantic Canada. Although there are serious data limitations, the analysis does suggest a number of opportunities for reducing the costs of rail passenger service through more realistic work rules and significant reductions in the cost of VIA overheads, equipment maintenance, and onboard services. Both VIA and railway overheads are singled out as being excessive, particularly in view of the simple network of services in this region. Chapter 4 also addresses a number of substitution scenarios that offer scope for significant cost savings and/or service improvements.

Chapters 5 and 6 of the report deal with transcontinental and remote and other regional services. In these cases, relatively little emphasis is placed on the assessment of need because of the strong political commitments that have already been made for the retention of these services, regardless of cost. Therefore, the analysis concentrates on identifying opportunities for improved financial performance.

Finally, Chapter 7 examines the impacts of the proposed new rail passenger legislation on the future of rail passenger service. It is shown, for example, that application of the proposed new cost recovery targets to the full costs of the services offered in 1984 would have reduced subsidies from the actual level of $474 million to approximately $215 million. This represents about one half of the proposed maximum limit for total VIA subsidies. In fact, it is also shown that if the cost recovery targets are applied only to avoidable railway costs, as suggested in the proposed legislation, and if VIA costs are reduced by a corresponding amount through increased efficiency, subsidy requirements fall even further to $125 million. In this case, however, the railways would assume a significant cost burden of the $154 million.

In either case, of course, some of these differences between the proposed total subsidy and subsidy requirements can be explained by the reinstitution of former services that were not offered during 1984 and by major capital commitments for new VIA equipment and facilities. Nevertheless, the analysis does suggest that application of the new cost recovery targets coupled with improvements in rail passenger efficiency should result in lower subsidy payments than are presently incorporated in the proposed legislation. Achievement of the proposed cost recovery targets, implies significant increases in VIA revenue which range from 55 to 95 percent and which may be unrealistic in relation to fares charged by competing modes.

The analysis also confirms, through comparisons of level of service attributes on various corridor routes, that consistent with the proposed new cost recovery targets, there is no need for federal government subsidies of rail passenger services in southern Ontario and Quebec. However, whereas the proposed new legislation anticipates substantial subsidies for regional services, particularly in Atlantic Canada, the analysis suggests that in these cases as well, there is no real need for federal government subsidy.

This study represents a first step towards a more systematic assessment of public need. Some of the financial implications of the analysis are used, for purposes of illustration, to give an indication of the magnitude of savings that are possible without any measurable deterioration in the accessibility of communities that are now served by VIA Rail. The study concludes with a number of suggestions for further considerations of rail passenger service that require more detailed analysis.

1. The Changing Policy Environment

1.1 Introduction

All rail passenger service in Canada receives large government subsidies to offset the differences between costs and revenues. Per passenger, these rail subsidies exceed (by an order of magnitude) subsidies for airports and aids to navigation involved in air travel, and any subsidies to bus passengers related to road construction and maintenance. Only subsidies for ferry services in Atlantic Canada and British Columbia are comparable to those associated with rail passenger service.

Traditionally, transportation subsidies have been justified as a means of achieving a variety of public interest objectives that could not be realized by other means. Examples include stimulation of economic development, employment creation, improvement in the accessibility of transportation disadvantaged communities, promotion of national unity, or energy conservation. In the case of rail passenger services. successive governments have always perceived a need to maintain some degree of rail accessibility, regardless of public cost. Periodically, of course, some attempts have been made to rationalize these services in response to changing economic conditions and changes in the degree of accessibility provided by alternative means of transportation.

Prior to 1967, for example, the federal government believed the need for rail passenger service to be widespread (and, incidentally, the sole responsibility of the railways which were expected to offset the losses on this public service from other, more profitable services). Subsequent to the National Transportation Act (NTA), the railways were relieved of 80 percent of the financial burden of these "imposed public duties" through legislative changes that allowed federal government subsidies to be paid for specific rail passenger services. Some latitude was also introduced to assess need in relation to the public costs involved by means of CTC hearings on applications for discontinuance.

Under the NTA, subsidies were authorized for those rail passenger services which, while uneconomic, were deemed to be in the public interest. The definition of "need" presumably implied the lack of adequate alternatives for satisfying the demand for intercity passenger travel in the absence of rail service. Thus, a remote community (for example, Churchill, Manitoba - which did have air services) would have a greater need for rail service than a community such as Ottawa which is well served by roads and bus services.

With the creation of VIA Rail, the responsibility for defining need in relation to cost was allocated to VIA management (at least with respect to level of service) and the Minister of Transport and, as a result, became more ad hoc in nature. (In 1981, for example, as a cost saving measure, the Minister of Transport unilaterally cancelled about 30 percent of VIA services; in 1985, to fulfil election promises, most of these were reinstated by another Minister.) In 1986, new rail passenger legislation has been proposed which attempts to tie the definition of public need to some demonstration of public use.

More often than not, however, the determination of need has been based on the degree of public support that can be mobilized for the continuation of services that may be in jeopardy, or, alternatively, upon the level of public outcry against decisions to eliminate or reduce service. Characteristically, therefore, inclusion of the term "need" without any guidance as to how such need might be measured has been one of the key weaknesses in many of the policy statements and legislative changes implemented thus far, for dealing with the national system of rail passenger services more efficiently and effectively.

Clearly, given the small market share and high cost of rail passenger services, one of the key issues that must be considered in future policy development, concerns the extent to which services are needed in communities where bus or other transportation services already exist. Any measure of such need will vary considerably depending primarily on the

availability, pricing, and level of service provided by alternative modes in different regions.

Due to variability in these factors, the development of a more substantive approach for assessing public need would be useful for determining which services are to be continued, expanded, or abandoned. For this reason, the principal objective of this study is to develop an approach for assessing public need for rail passenger service in communities that are also served by bus, and, where applicable, other modes of transportation.

1.2 Recent Appraisals of Rail Passenger Service

Periodically, major appraisals of Canadian rail passenger service have been initiated either because of the rising financial burden placed on the railways (prior to the National Transportation Act of 1967) or the federal government, or because of political or public concern with the quality of passenger service provided by the operator.

Following major delays experienced in passenger train operation during the 1983 Christmas period, for example, the Canadian Transport Commission initiated a special enquiry into the on-time performance of VIA Rail which eventually resulted in a widely publicized indictment of the general quality of rail passenger services in Canada at the time.

Without reviewing these many studies and assessments, it may be useful to describe the principal findings of two recent appraisals of VIA Rail and their associated recommendations.[1] One of these is a study completed by the authors in September 1984 dealing with the institutional factors that affect the costs of rail passenger service. The second is the recently

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[1] Several passenger services not operated by VIA are subsidized directly by the Canadian Transport Commission (generally involving mixed freight and passenger trains operated by railways other than Canadian National or Canadian Pacific). Subsidies for these non-VIA services are small in relation to the subsidies paid to VIA.

completed assessment of rail passenger subsidy programs carried out for Task Force on Program Review, chaired by the Deputy Prime Minister.

In an earlier study,[2] the authors concluded that present institutional arrangements for the provision of rail passenger service contribute significantly to high subsidies and poor performance, as perceived by the public because they lack incentives for improvements in either the quality of service or cost effectiveness. This occurs because VIA Rail finds itself in the peculiar position of being responsible for the provision of a service over which it has no authority to guarantee performance or control costs.

The conclusions and recommendations of the study focus on institutional changes that are likely to create those incentives necessary to reduce costs and improve operating efficiency. The major recommendations extracted from the report are as follows:

1. VIA Rail should be reorganized into three distinct operating divisions (transcontinental, corridor, and regional, remote and other services) that reflect the different competitive and operating environments of the various types of service. For each division, different principles should apply with respect to pricing and overall performance objectives.

2. Passenger train service provides a net contribution to railway overhead that can be used by VIA to obtain more favourable terms in new operating agreements. For this reason, VIA Rail should be given a mandate to negotiate firm prices for specific services provided by the railways, which are not necessarily limited by costing regulations established for other railway regulatory purposes.

3. In order to reduce overheads, VIA's role as an intermediary between the federal government and the railways should only be continued where public benefits derive from this function. In some cases, it may be desirable to return responsibility for rail passenger service to the railways under appropriate provisions of the NTA. Moreover, when the railways are confronted with the alternative of assuming this responsibility again, VIA may be able to negotiate better terms.

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2 See, Adil Cubukgil and Richard M. Soberman, The Cost of Rail Passenger Service in Canada: An Examination of Institutional Problems (Toronto: University of Toronto-York University, Joint Program in Transportation, 1984).

4. Federal government payments to VIA Rail should be made on a route-specific basis, as dictated by public need and necessity. For all other services, full cost recovery should be achieved over a reasonable period, and VIA's pricing policies should be amended accordingly.

5. VIA's preoccupation with high technology, successfully applied in other countries under entirely different operating environments and with much higher population and traffic densities, should be redirected towards improving those service characteristics that limit the attractiveness of existing services.

Many of the same conclusions were reached by the Task Force report dealing with rail passenger services. Without repeating the Task Force assessment in its entirety, the following conclusions are worth noting:[3]

1. There is a need for greater public dialogue on rail passenger service, based on factual information pertaining to costs, revenues, subsidies, and market shares of all modes of intercity passenger travel.

2. Except for a very small number of remote services (e.g. Churchill), there is no transportation need for subsidized rail passenger service because adequate, lower cost alternatives exist.

3. Subsidies for rail passenger service as a means of achieving other non-transport objectives have never been evaluated in terms of opportunities foregone in other social and economic sectors.

4. VIA Rail's subsidized fares have an adverse effect on private bus operators on competitive routes and result in insufficient returns for the bus industry to invest in product and service improvements.

5. In almost all cases, the diversion of rail subsidies to alternative modes would reduce net public cost and improve service quality. However, extension of passenger subsidies to new modes would, in most cases, be inconsistent with the proposed economic regulatory reform in Freedom to Move.

6. Although the full effect of further airline deregulation on airfares cannot be assessed at this time, there is a strong likelihood that VIA Rail ridership and revenue will be eroded in certain markets.

7. Recent surveys indicate that, when presented with factual information on the nature of rail passenger costs, revenues, and use, a significant proportion of the public withdraw their support for the large subsidies now paid by government.

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[3] Task Force on Program Review, Transportation (Ottawa: Canadian Government Publishing Centre, 1986).

8. The present process in which VIA Rail negotiates with the railways, the CTC audits railway charges, and Transport Canada monitors VIA Rail costs and approves subsidies, is too cumbersome and lengthy to permit effective management.

9. Firm price as opposed to "cost plus" contracts between VIA Rail and the railways should lead to improvements in the quality of service and incentives for cost reduction.

1.3 Defining Need

In assessing the need for rail passenger service, historical precedent cannot be ignored. Due to the vested interests involved, it is always more difficult to curtail an existing service than to substitute a more effective alternative. For this reason, many rail passenger services are operated today, simply as an extension of needs that may have existed some 30 to 40 years ago.

Contrast, for example, the intercity passenger transportation system in Canada at the close of the Second World War with the national system that exists 40 years later. In 1945, provincial highway networks were modest (if not primitive) in comparison to present day coverage and design standards, automobile ownership a fraction of today's figures, and, without an extensive network of high speed highways, bus services provided much less coverage and involved considerably higher travel times. Moreover, newly emerging airline services, constrained by the technology of the day related to both aircraft and navigational aids as well as the extensiveness of the system of airports, were not considered either affordable or sufficiently reliable for the vast majority of travellers.

Forty years ago, therefore, in practical terms, the need for rail passenger services was clear. In their absence, the large majority of Canadians simply would not have been able to travel about the country at acceptable user cost. Today, of course, as evidenced by statistics on use, the large majority of Canadians would simply be unaware of any reduction in rail passenger service.

Aside from historical precedents, governments also assess need on the basis of stated public preferences or perceptions. Some travellers, for example, simply prefer the rail mode over others, even when other modes may be cheaper, faster, and more reliable.[4] Rail transportation enjoys the support of lobby groups such as Transport 2000 and environmentalists, whereas proponents of air or bus travel are not similarly organized. Thus, even where alternatives to highly subsidized rail travel provide adequate accessibility in the vast majority of communities, elected officials perceive a high degree of public support for continuation of rail service and act accordingly, despite the fact that recent attitude surveys prove this level of public support to be more imaginary than real.[5]

There are, of course, some cases where need can be defined in more objective terms, as for example, where a community with neither road nor airport access is served only by a railway. Such cases in Canada are too few in number to justify the existence of the entire rail passenger network. Moreover, what is more frequently encountered is a community served by an airport or a road or both, without rail access. Interestingly enough, in these cases, neither airline nor bus subsidies are usually provided.

Thus, the need for rail passenger service in a particular community is perceived, in some cases, simply because it is there, in others, because strong lobby groups prefer rail to other modes and, in a very limited number of cases, because no other public transportation exists. Under these varying conditions, public policy with respect to the definition of need has also varied.

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[4] Such preferences are not entirely irrational since for many travellers, rail service is considered superior from the standpoint of comfort, air quality, motion effects, and the availability of onboard services and facilities.

[5] For example, when presented with facts on the public costs of rail passenger service, recent surveys show a significant shift in public preferences for rail as opposed to bus travel. See, for example, Adil Cubukgil and Richard M. Soberman, Bus-Rail Competition in High Density Travel Corridors (Toronto, University of Toronto-York University, Joint Program in Transportation, 1985).

The most recent attempt to define the need for rail passenger service occured early in March, 1986 when the Minister of Transport introduced new legislation into the House of Commons. The purpose of this new rail passenger legislation is to improve the quality of passenger service provided by VIA Rail while simultaneously reducing the total level of public subsidy provided by the federal government. In essence, the proposed National Rail Passenger Transportation Act attempts to modify the existing rail passenger system in two important ways.

First, the proposed legislation establishes financial targets for the performance of the rail passenger system. In fact, this is the first attempt made by any government to specify public need for rail passenger service in relation to the costs of these services. These financial targets relate to route-specific performance in terms of cost recovery ratios, as well as to an overall limit on total subsidies to be made available for the rail passenger system. In this manner, it is intended that the operating authority be given clear guidelines in terms of the financial performance expected by the government, something that has never occurred previously for the operation of rail passenger services, whether by VIA Rail or by the railways themselves.

Second, the proposed legislation makes a clear distinction among the various classes of rail passenger service now provided, in a manner that implies a clearer definition of public need than has previously been the case. This implicit definition of need is reflected in the distinction among cost recovery targets for each class of service. Regional services, for example, are expected to recover 40 percent of their costs, failing which, the stated intent is to discontinue these services.[6] For the corridor services, however, a 100 percent cost recovery target is defined, a clear reflection of the fact that they are not considered to be as necessary as the regional services.

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[6] It should be noted, however, that the proposed bill does not preclude some degree of substitution of provincial funding for subsidies now paid entirely by the federal government, nor is it entirely precise in its definition of "costs".

Essentially, therefore, the proposed legislation represents a major departure from previous policy on rail passenger services; it defines "public need" in terms of two basic parameters, namely, a budgetary limit and a demonstration of actual use. Although the intent is clear, it should be noted that there are important qualifications in the proposed legislation which might permit significant deviation from the basic principles.

2. An Overview of the Intercity Passenger System

2.1 Introduction

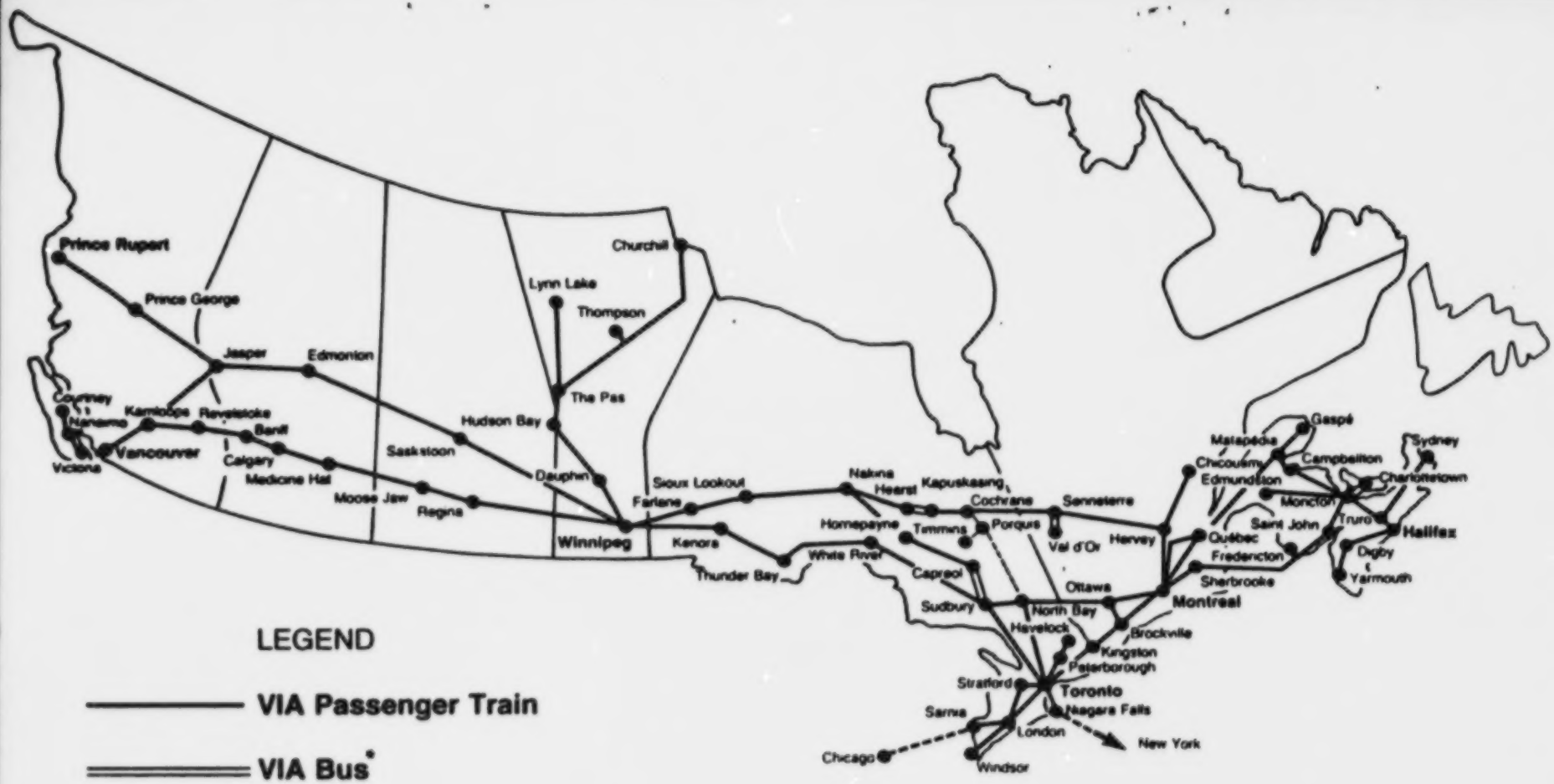
Any assessment of the need for rail passenger service should reflect the availability of alternative means of transportation for meeting the travel requirements of specific communities. For this reason, this section begins with a brief overview of the general nature of rail passenger services now offered in Canada as well as summary information related to competing bus and air services.

2.2 Existing Rail Passenger Services

As shown in Exhibit 2.1, VIA Rail operates an extensive rail passenger network in Canada that provides service to most major population centers. Exhibits 2.2 and 2.3 give some indication of the overall financial performance and the level of subsidies for specific services operated by VIA Rail in 1984. While there is considerable variation in the financial performance of individual services, as measured by cost recoveries that range from as little as one percent to a maximum of 43 percent, the overall level of subsidy for rail passenger service implies, a priori, a political decision that these services basically fulfil an essential public need.

For specific routes, service characteristics such as frequency of service, fares, and travel times vary considerably. There is also considerable variation in traffic density, operating characteristics, track facilities, and type of equipment. These various services, which range from services to remote communities not served by competing modes to services offered in highly competitive markets, present very different policy concerns.

Exhibit 2.4, for example, compares the four major classes of service in terms of financial performance, share of the rail passenger market, and distribution of subsidies. Corridor services (which are clearly least needed in view of the wide variety of alternatives available) have the "best" financial performance in terms of cost recovery. However, they also receive a significant share of the total subsidy.



LEGEND

——— **VIA Passenger Train**

═══ **VIA Bus***

- - - - - - - - - - - - **VIA-AMTRAK Joint Train**

— — — — — — — — — — **VIA-Ontario Northland Railway Train**

* Due to the scale of the map, two VIA bus routes cannot be shown: Fredericton Junction – Fredericton and Burlington – Hamilton.

Exhibit 2.1

VIA Rail 1985 National Network

Exhibit 2.2

1984 Via Rail Statistics

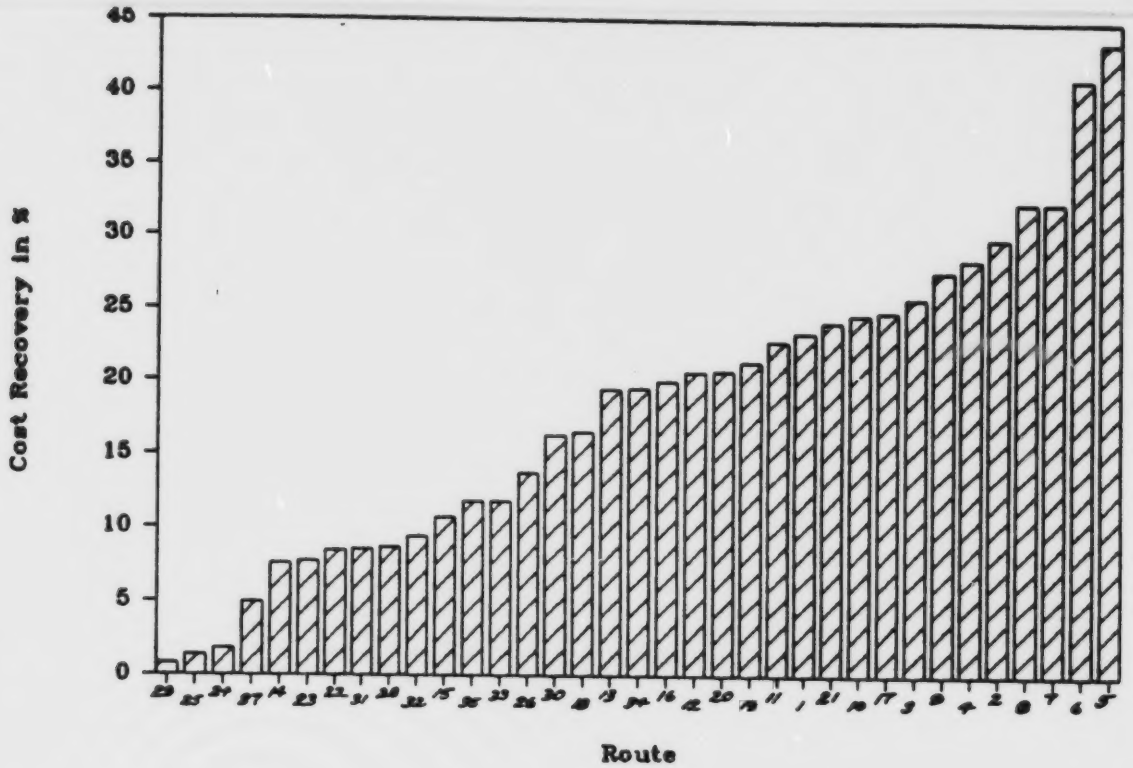
[illegible]	Total Passengers (Actual)	Total Passenger Miles (000)	Railway Charges ($000)	VIA Cost ($000)	Total Cost ($000)	Total Revenue ($000)	Deficit ($000)	Rev./ Cost (%)	Deficit per Pass. Mile (¢)	Deficit per Pass. ($)
Montreal - Vancouver	550,674	408,080	96,309	93,671	189,980	44,488	145,492	23	36	264
Montreal - Halifax	468,389	179,825	32,285	26,324	58,609	17,467	41,142	30	23	88
[illegible]	1,019,063	587,905	128,594	119,995	248,589	61,955	186,634	25	32	183
Montreal - Quebec	365,764	49,453	15,123	7,120	22,243	5,743	16,500	26	33	45
Montreal - Ottawa	372,238	38,530	10,498	5,518	16,016	4,544	11,472	28	30	31
Ottawa - Toronto	325,656	63,236	9,680	7,735	17,415	7,575	9,840	43	16	30
Toronto - Montreal	1,552,943	372,184	63,257	37,972	101,229	41,441	59,788	41	16	38
Toronto - Kingston	77,331	8,148	2,118	933	3,051	987	2,064	32	25	27
Toronto - Windsor	797,548	104,361	25,057	15,779	40,836	13,196	27,640	32	26	35
Toronto - Stratford - London	623,229	38,840	11,581	5,138	16,719	4,614	12,105	28	31	19
Toronto - Sarnia	411,591	42,313	14,206	6,492	20,698	5,098	15,600	25	37	38
Toronto - Niagara Falls	250,762	14,264	4,682	1,836	6,518	1,489	5,029	23	35	20
[illegible]	4,777,053	731,329	156,202	88,523	244,725	84,687	160,038	35	22	34
Calgary - Edmonton	61,901	9,790	3,558	1,285	3,843	794	3,049	21	31	49
Victoria - Courtenay	41,183	3,744	1,338	373	1,711	333	1,378	19	37	33
Winnipeg - Saskatoon	15,056	4,773	3,531	1,200	4,731	360	4,371	8	92	290
Saskatoon - Edmonton	10,465	2,802	2,518	776	3,294	252	3,042	8	109	291
Montreal - Gaspé	126,088	45,927	14,923	9,682	24,605	4,927	19,678	20	43	156
Halifax - Yarmouth	59,761	7,160	2,098	981	3,079	765	2,314	25	32	39
Campbellton - Moncton	33,409	4,117	3,053	654	2,706	446	2,260	16	55	68
Halifax - Sydney	170,955	21,201	6,223	2,557	8,780	1,876	6,904	21	33	40
Halifax - St.John - Fredericton	113,344	14,390	4,539	1,884	6,423	1,335	5,088	21	35	45
Moncton - Edmundston	3,494	607	167	90	257	62	195	24	32	56
[illegible]	635,656	114,511	39,947	19,602	59,429	11,150	48,279	19	42	76

Exhibit 2.2 (cont'd)

1984 Via Rail Statistics

[illegible]	Total Passengers (Actual)	Total Passenger Miles (000)	Railway Charges ($000)	VIA Cost ($000)	Total Cost ($000)	Total Revenue ($000)	Deficit ($000)	Rev./ Cost (%)	Deficit per Pass. Mile (¢)	Deficit per Pass. ($)
The Pas - Lynn Lake	9,616	938	807	428	1,235	104	1,131	8	121	118
Winnipeg - Churchill	45,501	12,819	12,949	5,913	18,862	1,457	17,405	8	136	383
Churchill - Wabowden	1,154	72	230	110	340	6	334	2	464	289
Thunder Bay - Sioux Lookout	1,785	120	906	118	1,024	14	1,010	1	842	566
Perlane - Winnipeg	10,520	1,073	733	143	876	120	756	14	70	72
Sudbury - White River	2,377	188	244	42	286	14	272	5	145	114
Capreol - Winnipeg	34,418	8,147	7,810	2,470	10,280	889	9,391	9	115	273
Hearst - Wakina	384	35	699	123	822	6	816	1	2,331	2,125
Ottawa - Sudbury	12,030	3,092	1,111	366	1,477	240	1,237	16	40	103
Montreal - Chicoutimi	22,030	4,170	3,616	1,174	4,790	409	4,381	9	105	199
Montreal - Cochrane	39,873	6,680	6,103	2,870	8,973	840	8,133	9	122	204
Edmonton - Prince Rupert[1]	14,576	6,776	3,553	1,883	5,436	641	4,795	12	71	329
Winnipeg-Edmonton-Prince Rupert[2]	78,369	43,106	13,126	7,908	21,034	4,098	16,936	19	39	216
Toronto - Kapuskasing	65,234	12,606	7,254	7,380	14,634	1,725	12,909	12	102	198
[illegible]	337,867	99,822	59,141	30,928	90,069	10,563	79,506	12	80	235
[illegible] TOTALS	6,769,638	1,533,567	383,884	258,928	642,812	168,355	474,457	26	31	70

1 To end of June, 1984.
2 From July, 1984.



LEGEND

1	Montreal-Vancouver	19	Halifax-Sydney
2	Montreal-Halifax	20	Halifax-St. John-Fredericton
3	Montreal-Quebec	21	Moncton-Edmundston
4	Montreal-Ottawa	22	The Pas-Lynn Lake
5	Ottawa-Toronto	23	Winnipeg-Churchill
6	Toronto-Montreal	24	Churchill-Wabowden
7	Toronto-Kingston	25	Thunder Bay-Sioux Lookout
8	Toronto-Windsor	26	Farlane-Winnipeg
9	Tor.-Strat.-London	27	Sudbury-White River
10	Toronto-Sarnia	28	Capreol-Winnipeg
11	Toronto-Niagara Falls	29	Hearst-Nakina
12	Calgary-Edmonton	30	Ottawa-Sudbury
13	Victoria-Courtenay	31	Montreal-Chicoutimi
14	Winnipeg-Saskatoon	32	Montreal-Cochrane
15	Saskatoon-Edmonton	33	Edmonton-Prince Rupert
16	Montreal-Gaspe	34	Winnipeg-Edmonton-Pr. Rupert
17	Halifax-Yarmouth	35	Toronto-Kapuskasing
18	Moncton-Campbellton		

Exhibit 2.3
VIA Routes Ranked by 1984 Cost Recovery Ratios

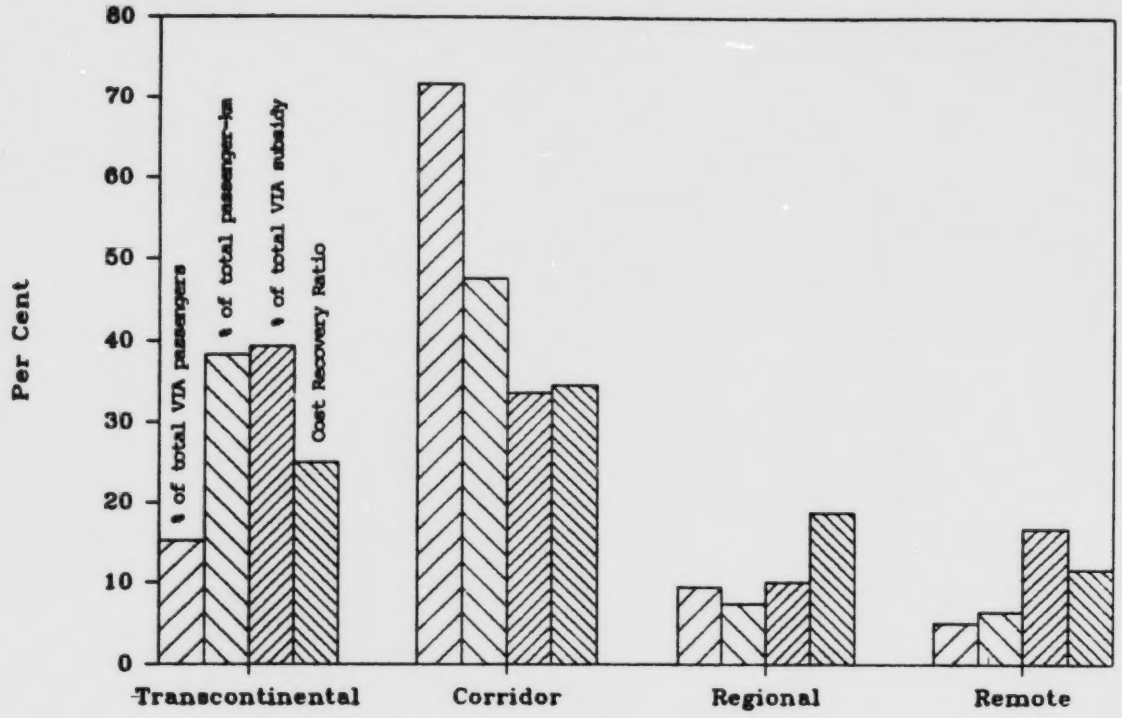


Exhibit 2.4
1984 Financial Comparisons by Type of Service

VIA operates four transcontinental services linking Halifax and Vancouver. The "Atlantic" operates daily between Halifax and Montreal, on the southern route through St. John and Sherbrooke. The "Ocean" operates daily between Moncton and Montreal along the northern route through Campbellton. The "Canadian" provides daily service between Montreal/Toronto and Vancouver. Originating in Montreal, the Canadian operates via Ottawa, Pembroke, and North Bay to Sudbury, where it joins the Toronto-Vancouver section, and follows the southern CP route through Thunder Bay, Winnipeg, Regina, and Calgary to Vancouver. The "Super-Continental" originates in Winnipeg, operating daily between Winnipeg and Vancouver along the CN route through Saskatoon, Edmonton and Jasper.

The Quebec City-Windsor corridor is the most densely populated and highly travelled urban corridor in Canada. There is active competition among all common carriers for this lucrative travel market. In addition to regular train services, VIA offers express services using new LRC trains (which have replaced the Turbo trains) throughout the corridor. These trains make infrequent stops and offer faster schedules, better equipment, and first-class onboard services. On the heavily-travelled Toronto-Montreal route, 108 trains operate weekly with travel times ranging from 4 hours 45 minutes for the LRC service to six hours for local trains.

VIA's regional passenger rail services in Atlantic Canada focus on Halifax and Moncton. In western Canada there is regional service between Victoria and Courtenay.[1] VIA also provides rail passenger services to smaller, less accessible communities. Frequencies vary from weekly service between Wabowden and Churchill to daily service to the larger remote communities. VIA appears to maintain a minimum service frequency of three trains per week to and from remote communities.

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1 Regional service between Calgary and Edmonton was discontinued in November, 1985. Other services previously classified as regional (Saskatoon-Winnipeg, Edmonton-Saskatoon) are now part of the "Supercontinental" which was reinstated in June, 1985.

2.3 Competing Services

Intercity Bus Services

The intercity bus network in Canada is much more extensive than the passenger rail network. However, only those bus routes servicing origin-destinations in direct competition with VIA rail services are of interest to this study.

Although motor coach operators do offer transcontinental bus services, they are generally not viable alternatives to rail or airline travel from the standpoint of either travel time or continuity. This is evidenced in the scheduling of the Montreal-Vancouver and Toronto-Vancouver buses which make frequent stops and provide more of a linked regional service to communities along the route than a transcontinental service.

Bus service in the Quebec City-Windsor corridor, on the other hand, is characterized by very frequent express service between the major urban centers. Travel times and fares offered by the bus and rail modes are very competitive, with rail generally offering lower scheduled travel times and slightly higher fares. To compensate for the slightly longer travel times, lower vehicle seating capacity and perceived lower quality of service, bus operators offer more frequent service than VIA Rail.

Direct bus service is provided to almost all of the communities served by regional rail passenger services. Here again, bus companies are able to compete with rail passenger services primarily on the basis of fare and frequency of service. However, on those routes offering express service, bus travel times are generally lower than rail.

Airline Service

There are also a wide variety of air services that compete in the same markets as rail passenger service. In contrast to the rail and bus modes, air service is directed toward that segment of the intercity travel market that

is more sensitive to travel time than travel cost. Traditionally this has been the business traveller willing to pay higher fares in return for faster travel.

Air service is most attractive on long haul transcontinental routes where the savings in travel time more than justify the additional cost of air travel purchased at regular fares. It is important to note, however, that airlines are increasingly targeting to penetrate the price sensitive market through special discount fares that, in many cases, approximate rail fares. On the five transcontinental routes, the airlines offer more frequent service and much higher capacity than either rail or bus. Air Canada and Eastern Provincial Airways provide service between Halifax and Montreal, and, Moncton and Montreal. Air Canada and CP Air provide most of the service to western Canada, with Pacific Western offering some flights on the Toronto-Vancouver and Winnipeg-Vancouver routes.

Air service in the Quebec-Windsor corridor concentrates on the more heavily travelled, Toronto-Ottawa, Toronto-Montreal, Montreal-Ottawa and Toronto-Windsor routes. Although the major air carriers, Air Canada and CP Air, provide most service on these routes, the larger regional carriers, notably Nordair and Quebecair, also compete for a share of the market. On the shorter, less heavily travelled, Montreal-Quebec City route, Quebecair actively competes with Air Canada, providing approximately two-thirds of the total capacity. Quebecair, for example, recently (April, 1986) advertised Toronto-Montreal fares ($59) at about half the Air Canada fares for three daily departures. The small regional carriers (Air Ontario, City Express, First Air, Torontair and Voyageur Airways) provide limited service between Montreal and Ottawa, Ottawa and Toronto, and, Toronto and Windsor. In addition, Air Ontario and Torontair provide service on short haul routes such as Toronto-Kingston, Toronto-London, and Toronto-Sarnia, using a variety of small propeller aircraft with seating capacities ranging from 10 to 55 seats.

Air service is also provided on some of VIA's regional routes. Air Canada and Eastern Provincial Airways offer service between Halifax and

Yarmouth, Sydney and Saint John. Air service between Quebec City and Mont Joli is provided by Quebecair. The Toronto-North Bay and Sudbury-Winnipeg routes are served by regular Air Canada flights. In addition, Air Ontario and Voyageur Airways offer scheduled service between Toronto and North Bay. In western Canada, regional air service is dominated by CP Air and Pacific Western, with Air Canada and Time Air also competing on the heavily travelled Calgary-Edmonton route.

Limited air service is available to some of the larger remote communities. Air Canada has frequent flights between Toronto and Timmins, with an intermediate stop in North Bay. Connecting service between Timmins and Kapuskasing is provided by Norontair. Austin Airways provides service to these northern Ontario communities with their Toronto-Timmins-Kapuskasing flights. Bearskin Lake Air Services has scheduled flights between Thunder Bay and Sioux Lookout utilizing a small 14-seat Beechcraft plane. In western Canada, Pacific Western flies between Winnipeg and Churchill, while CP Air serves the Edmonton-Prince Rupert route.

These comparisons of rail, bus and air services indicate that, for most communities, there is a multiplicity of travel alternatives available that cover a wide range of fares, travel times, and service frequencies. In fact, it might be interesting to speculate on the impact of a major shutdown of any of the three modes, for whatever reasons, over a lengthy period of time.

It is almost impossible to imagine the inconvenience that would be caused to the majority of Canadians by the absence of air service - across the nation, within regions, or in many remote communities. Withdrawal of bus services would have more localized effects, depriving many communities of any form of common carrier service.

In comparison to bus and air service, a major disruption in rail passenger service would affect a significant number of tourists and a small number of communities. Effectively, the impacts would go largely unnoticed simply because relatively few travellers now use VIA services and,

in the majority of cases, viable alternatives are readily available. Moreover, both airlines and bus companies would have considerable flexibility to increase capacity by more frequent service to accommodate any overload resulting from the loss of rail service, whereas the same option is not available to VIA on short notice.

2.4 Conceptual Approach

In subsequent sections of this report, need is considered in terms of the four major classes of rail passenger service identified previously; namely, transcontinental, corridor, regional and remote services. However, it may be useful here to describe the general approach for the determination of need that is applied in each of these cases.

Clearly, the need for rail passenger service depends upon the availability of alternative means of transportation and the characteristics of service provided by those alternatives. Where air and/or bus alternatives to rail service exist, relative fares, travel times, comfort, and frequency of service probably represent reasonable attributes upon which to base any assessment of the need for rail subsidies, or at least subsidies that are more than proportional to subsidies for the alternatives. Where no competition from other modes exists, the need for rail service can be assessed in relation to the subsidies that would be required to provide "equivalent" accessibility by other modes.

In the first case, where competition exists, fares, travel times, and frequency can be compared in quantitative terms. Comfort is a more difficult attribute to compare, particularly for long trips, but is really only important in the case of bus-rail comparisons. For purposes of illustration, therefore, examples can be limited to cases where journey times are reasonably short - six hours or less.

In the competitive case, two basic assumptions are made. First, scheduled travel time by air is always less than scheduled travel time by rail. Neglecting differences in comfort for this air-rail comparison, the only

remaining attributes are fares and service frequency. Conceptually, therefore, for every rail origin-destination for which there is competing airline service, it is possible to plot the relative frequencies and fares, as shown in Exhibit 2.5.

Obviously, for any origin-destination where air fares are comparable or lower and frequency of service comparable or higher, potential travellers will not be disadvantaged in any way if they travel by air. Thus, subject to certain qualifications made below, the shaded quadrant in Exhibit 2.5 represents, as a minimum, those cases where no real need for rail service can be established.

The second assumption is that for bus-rail competition, bus fares are almost always lower than rail fares. For this assumption, therefore, the important service attributes are frequency and travel time (neglecting comfort, at least for short trips, as noted above) These can also be plotted in relative terms for various rail origin-destinations as shown in Exhibit 2.6. Similarly, it can be argued, for trips of relatively short duration, no real need for rail service can be established for the shaded quadrant on the diagram.

This simplistic approach to assessing need in the case where alternative services compete with rail passenger service has, of course, a number of practical limitations. First, it can only be used to compare specific origins and destinations, rather than routes. In other words, competing bus and rail services between two route terminals (such as Halifax and Yarmouth) may not serve the same intermediate points. This is even more obvious in the case of rail-air service comparisons.

Second, there are some subjective evaluations involved in the comparison of service attributes such as travel time and frequency. For example, where bus frequencies are higher but travel time some 10 percent to 15 percent longer than rail travel time, would the rail service still fall within the area of the diagram labelled as "no need"? Or, where discount air

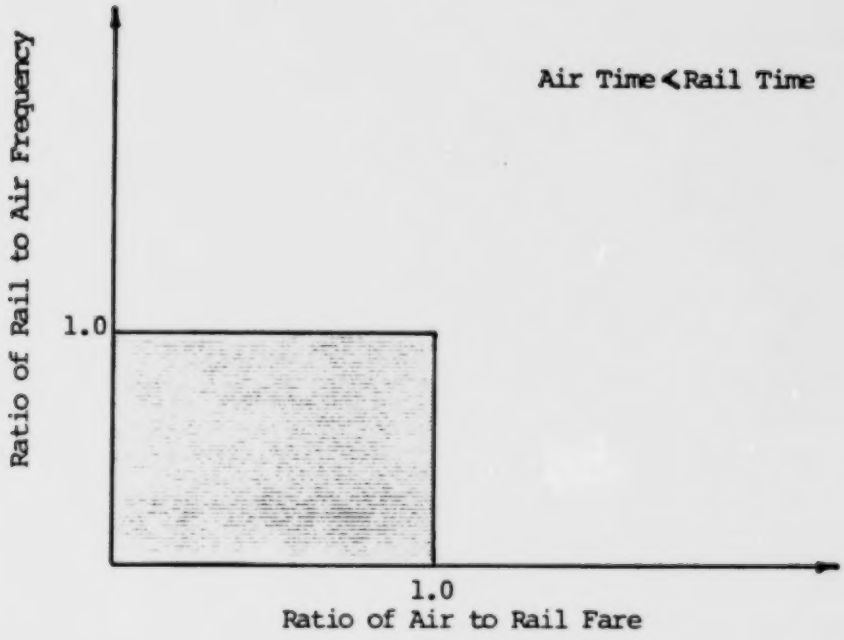

Exhibit 2.5
Comparison of Air and Rail Level of Service

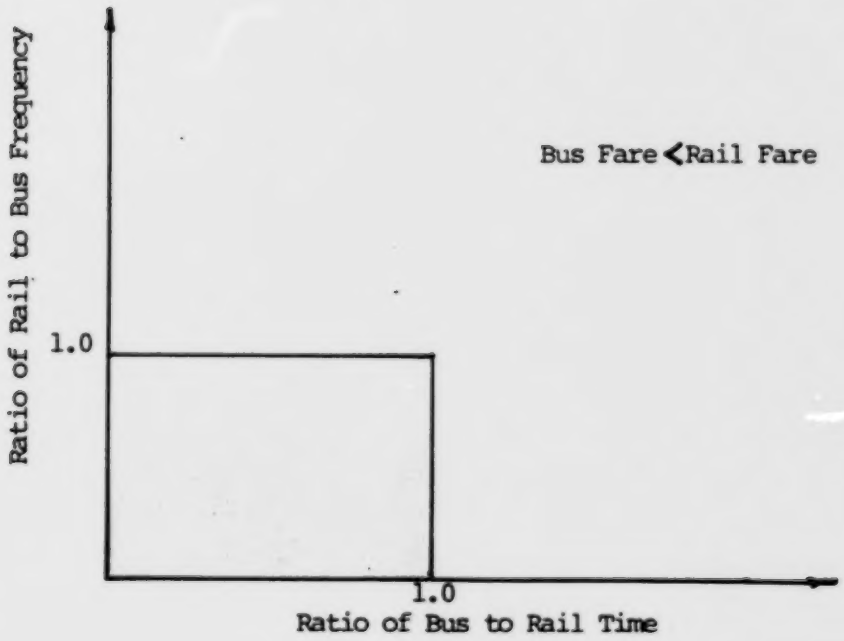

Exhibit 2.6
Comparison of Bus and Rail Level of Service

fares are only slightly higher for long trips ($269 for Toronto-Vancouver versus $248 by VIA) is there a public need for rail service to accommodate low income travellers?

Third, comparisons of rail and air fares are difficult to make because of the wide range of special air fares available. Since a large share of the rail market is apparently price sensitive (for the long trips only, because, as previously noted, bus fares are almost always lower than competing rail fares), a significant proportion of this market plans its travel far enough in advance to take advantage of the various excursion fares offered by the airlines.

Finally, the approach described in Exhibits 2.5 and 2.6 is based on comparisons of fares rather than full costs. Since the ratio of full cost to fare for rail travel is considerably higher than similar ratios for either bus or air service, re-calibration of the diagrams on the basis of full costs (including the subsidy element) would alter the results significantly.

In the case of rail passenger services where alternative common carrier service is limited or not available, two options for assessing need can be considered. The first involves a straightforward comparison of the full costs of providing equivalent service by either bus or air. The term equivalent may refer to measures of capacity, travel time, and frequency of service, allowing for the same qualifications with respect to measures of comfort referred to previously. However, any suggestion to substitute the lower cost alternative would probably be perceived as a cost reduction exercise that provides no visible benefit to affected communities. (If this were not the case, almost the entire rail passenger network could be phased out of operation.)

Alternatively, therefore, a second option for the case of remote or regional services would involve comparing the level of service in terms of schedule frequency, capacity, and travel times that could be provided to

specific communities for the same or lower subsidy now associated with rail service. At the same fare levels, any improved level of service could lead to increased ridership and revenues (as a result of diversions from private automobiles), thereby reducing the level of public subsidy without any decrease in accessibility or increase in user costs.

The following chapters provide more detailed assessment of the various classes of rail passenger service now offered from the standpoint of possibilities for cost reductions, revenue increases, and modal substitutions for all but the truly remote services. In some cases, the definition of remote appears somewhat arbritary because there are competing services for which cost comparisons can be attempted. In other cases, however, while there are certainly opportunities for the substitution of air services, where no road parallels the rail route, it is beyond the scope of the present study to estimate the various costs associated with providing the necessary infrastructure such as airstrips and navigational aids.

3. Quebec City-Windsor Corridor

3.1 Introduction

The Quebec City-Windsor Corridor is the most significant component of the national rail passenger system. In 1984, this high-density corridor accounted for more than 70 percent of all passengers carried by VIA Rail. Corridor services achieve the highest cost-recovery ratio in VIA's system and require the smallest subsidy per passenger-kilometre in comparison to other classes of service. However, they still require large public expenditures in terms of both operating and capital subsidies. In 1984, for example, VIA's operating deficit on corridor services was some $160 million (one-third of the total operating deficit), and, as in previous years, a very large share of the government's capital expenditures was allocated to corridor improvements.[1]

The Toronto-Montreal route is the backbone of the corridor network, accounting for some 20 to 25 percent of all passengers carried and revenues collected. This route, together with Montreal-Quebec, Montreal-Ottawa, Ottawa-Toronto, and Toronto-Windsor, constitutes the principal corridor system which has been the focus of VIA's planning and developmental efforts over the last five years. Also included in the existing corridor network are the two international routes that connect with the Amtrak System (Toronto-Niagara Falls and Toronto-Sarnia) and two Rail Diesel Car (RDC) services (Toronto-Stratford-London and Toronto-Kingston).[2] The most recent addition to the corridor system is a daily train between Toronto and Peterborough, which basically operates as a long-distance commuter service.

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1 A large share of the $600 million that the government has provided to VIA Rail in capital subsidies was spent on new equipment (i.e., LRC) purchases and infrastructural improvements in the corridor (most importantly the Smiths Falls-Brockville section on the Toronto-Ottawa route).

2 The RDC service between Toronto and Kingston was cancelled in the fall of 1985. Kingston continues to be served regularly, however, by both the Toronto-Montreal and Toronto-Ottawa routes.

In the following section, the characteristics of rail services are described in more detail. This is followed by an examination of the financial performance of rail services. Alternative bus and air services on each of the corridor routes are then described. Finally, comparisons are drawn among the three modes in terms of both service levels and cost characteristics.

3.2 Rail Service Characteristics

In 1984, 4.8 million passengers were carried, representing some 730 million passenger-miles (1,168 passenger-km) of travel (see Exhibit 3.1). The highest volume route was Montreal-Toronto, followed by Toronto-Windsor and Toronto-Stratford-London. Average trip length on corridor routes varied between 91 kilometres on the Toronto-Niagara Falls route and 384 kilometres on the Montreal-Toronto route, with a corridor-wide average of 245 kilometres. On most routes, with perhaps the exception of Montreal-Ottawa, the average trip distance was considerably less than the route length. This was particularly apparent on the three routes to the west of Toronto, where the average trip distances were only 50 to 60 percent of the total length of the route. This suggests, of course, considerable intermediate travel on most corridor routes (e.g., to Guelph on the Toronto-London route, to London on the Toronto-Windsor and Toronto-Sarnia routes). The service characteristics on each of the corridor routes are described in more detail below.

Quebec City-Montreal

There are two rail routes between Quebec and Montreal: the CP route through Drummondville and the CN route through Trois-Rivieres. The former is 251 kilometres and takes 2 hours and 50 minutes, serving Drummondville, St. Hyacinthe and St. Lambert. The longer CN route (278 kilometres) takes 3 hours and 20 to 30 minutes. In addition to Trois-Rivieres, it serves 12 local communities between Montreal and Quebec (Ste.-Foy). VIA Rail currently operates three daily departures on each of these two routes (a total of 35 weekly departures in each direction). In addition, the overnight train from Halifax to Montreal, the Ocean, stops at

Exhibit 3.1

Corridor Rail Services

	Route Length (km)	Passengers[1]	Passenger[1] Miles (000)	Average[1] Trip Length (km)	Daily[2] Departures	Scheduled[2] Travel Time (hour:min)	One-way[2] Regular Fare ($)
Quebec-Montreal	251 (278)[3]	365,764	49,453	216	3 (3)	2:50 (3:20)	25.00
Montreal-Ottawa	187	372,238	38,530	166	6	2:05	18.00
Ottawa-Toronto	446	325,656	63,236	310	2 (2)	4:07 (5:50)	39.00
Montreal-Toronto	539	1,552,943	372,184	384	5 (2)	4:45 (5:50)	44.00
Kingston-Toronto	254	77,331	8,148	168	1	2:50	21.95
Toronto-Windsor	359	797,548	104,361	210	4 (1)	4:05 (4:30)	33.00
Toronto-Sarnia	280	411,581	42,313	165	1 (2)	3:15 (3:35)	26.00
Toronto-London	185 (195)	623,229	38,840	90	9 (4)	2:15 (2:50)	18.00
Toronto-Niagara Falls	132	250,762	14,264	91	3	1:55	12.00
Total	NA	4,777,052	731,329	245	N/A	N/A	N/A

1 Passenger statistics are for 1984

2 Schedule and fare information are for 1985. Departures refer to average daily trips in each direction (i.e., round trips)

3 Numbers in brackets are for longer routes or slower services

Charny, across the St. Lawrence from Quebec City. The first express train leaves Quebec at 7:15 a.m., and generally offers a shuttle service throughout the day, with a 30-minute layover at each terminal. The slower trains through Trois-Rivieres fill the gaps between express departures. The one-way rail fare is $25.

Montreal-Ottawa

There are six daily train departures in each direction on the 187 - kilometre Montreal-Ottawa route. Although only three of these departures are classified as Rapido, the travel time of 2 hours and 5 minutes is about the same for both Rapido and regular service. All trains follow the CN route through Alexandria. There are five intermediate stops between Montreal and Ottawa. Two trains in each direction stop at Maxville and Casselman, four trains stop at Coteau, five trains at Alexandria, and all trains at Dorval. First trains in the morning leave Montreal at 7:45 and Ottawa at 7:10, and last evening trains leave Montreal at 20:50 and Ottawa at 19:50. The one-way rail fare between Ottawa and Montreal is $18.

Ottawa-Toronto

The rail route between Ottawa and Toronto is 446 kilometres, leaves Ottawa on the CN line, passes through Carlton Place and Smiths Falls on the CP line, and joins the CN main line between Montreal and Toronto at Brockville. There are two daily express trains operating on this route, leaving in each direction early in the morning (departing Ottawa at 7:15 and Toronto at 7:50) and late afternoon (departing Ottawa at 17:00 and Toronto at 17:30). Express trains stop at Smiths Falls, Brockville, and Kingston, and the scheduled travel time is 4 hours and 7 minutes. In addition, there is a slower train that takes 5 hours and 50 minutes, making five intermediate stops between Kingston and Toronto (these trains leave Ottawa at 9:20 and Toronto at 9:00). There is also an overnight train that leaves Ottawa at midnight connecting with the overnight train from Montreal at Brockville, arriving at Toronto at 7:30 in the morning. The overnight train in the opposite direction leaves Toronto at 11:35 in the evening, arriving in Ottawa

at 6:20 a.m. In total, therefore, there are four daily rail departures between Ottawa and Toronto. The one-way regular rail fare is $39.

Montreal-Toronto

The rail route between Montreal and Toronto is 539 kilometres, and the fastest train on this route has a scheduled travel time of 4 hours and 45 minutes. There are five express departures a day, all of which stop at Dorval and Kingston; two of these services also stop at Cornwall and one at Belleville and Cobourg. The first trains depart from Montreal at 7:25 and from Toronto at 7:30, and the last trains depart at 17:50 in both directions. The daily local service takes 5 hours and 50 minutes, making 10 intermediate stops. There is also an overnight train leaving in both directions at 11:35 p.m., arriving at 7:30 a.m. The one-way regular rail fare between Toronto and Montreal is $44.

Toronto-Windsor

The rail route between Toronto and Windsor is 359 kilometres and passes through London. There are five departures a day (four of which are classified as Rapido service), and the scheduled travel time varies between 4 hours and 5 minutes and 4 hours and 30 minutes. The number of intermediate stops for each train varies, but all trains stop at London and one train stops at as many as eight stations. The first train leaves Windsor at 6:20 a.m. (arriving at Toronto at 10:30) and the last train leaves Toronto at 19:30 (arriving at Windsor at 23:50). The first departure from Toronto is at 9:00, and the last departure from Windsor is at 18:10. The one-way rail fare between Toronto and Windsor is $33.

Toronto-Sarnia

The rail route between Toronto and Sarnia is 280 kilometres and also passes through London. Service on this route consists of three departures a day, all of which stop at London. One of these is Rapido service with a scheduled travel time of 3 hours and 15 minutes. The other two trains take 3 hours and 25 minutes to 3 hours and 35 minutes (one of which connects with Amtrak service between Detroit and Chicago). The first departures

from Sarnia and Toronto are at 6:50 and 8:15 respectively, and the last departures at 18:10 and 18:00 respectively (the morning departure from Toronto and the evening departure from Sarnia connecting with the Detroit-Chicago service). The one-way rail fare between Toronto and Sarnia is $26.

Toronto-London

As noted above, London is on both Toronto-Windsor and Toronto-Sarnia rail routes, and all trains on these routes stop at London. The combined frequency of these two services is eight departures, and the scheduled travel time is 2 hours to 2 hours and 15 minutes. There is another departure on the same route which operates only as far as London. In addition, there is RDC service four times a day between Toronto and London through Stratford. This slightly longer route takes 2 hours and 50 minutes, and also serves Brampton, Georgetown, Guelph, Kitchener, and St. Mary's. In total, therefore, there are 13 train services a day between Toronto and London, providing excellent service throughout the day. The first departure from London is at 6:15 (arriving at Toronto 8:30), and from Toronto at 8:15 (arriving at London 10:30). The last departures from London and Toronto are at 20:15 (arriving at 22:30) and 23:15 (arriving 1:30) respectively. The one-way rail fare for this 185-195 kilometre trip (depending on the route) is $18.

Toronto-Niagara Falls

The 137 kilometre rail route between these two cities passes through Hamilton and St. Catharines. Scheduled travel time is 1 hour and 55 minutes, and there are three daily departures. Two of these are RDC services, and a third is a conventional train that connects with Amtrak's Niagara Falls-New York City service. The RDC trains depart from Niagara Falls at 6:40 and 13:10, and from Toronto at 16:55 and 22:00. The New York connection leaves Toronto in the morning (9:40) and returns to Toronto in the evening (20:10). The one-way rail fare between Toronto and Niagara Falls is $12.

3.3 Financial Performance of Rail

Although the corridor services, on average, achieve a better cost-recovery ratio than the rest of VIA's system, the financial performance of these services is still very poor (see Exhibits 3.2 and 3.3). In 1984, corridor operating costs totalled $245 million, compared with revenues of only $85 million. The resulting deficit of $160 million represented a third of VIA's total deficit that year. The highest cost-recovery ratio was achieved on the Ottawa-Toronto route (43 percent). The second highest cost-recovery ratio was achieved on the Montreal-Toronto route, but given the volume of traffic on this route, the deficit of $60 million was almost 13 percent of VIA's total deficit. The performance of some of the corridor routes, such as Toronto-Niagara Falls, Toronto-Sarnia, and Quebec-Montreal, was even below the system-wide average.

The average revenue per passenger varied between $6 on the Toronto-Niagara Falls route and $27 on the Montreal-Toronto route, with an average of $18 per passenger throughout the corridor. The average revenue per passenger-kilometre was 7.3¢ and did not vary a great deal throughout the corridor. With the exception of Toronto to Niagara Falls where the average was 6.5¢, revenue per passenger-kilometre on all the routes was in the range of 7-8¢ per passenger-kilometre.

Operating costs in the corridor averaged $51 per passenger, yielding an average deficit of $33 per passenger. The lowest unit costs per passenger-kilometre were incurred on the two longest routes, Montreal-Toronto and Ottawa-Toronto and the highest unit costs on the Toronto-Sarnia and Toronto-Niagara Falls routes. The range varied between 17¢ and 31¢ per passenger-kilometre. The two routes with the lowest unit operating costs also had the lowest unit deficits (10¢ per passenger-kilometre), while the two highest cost routes also encountered the highest unit deficits (22¢-23¢ per passenger-kilometre).

Since the unit revenues appear to be fairly constant throughout the corridor, financial performance of each route depends upon the attainable

Exhibit 3.2

Financial Statistics for Corridor Services, 1984

(000's)

	Railway Charges	VIA Costs	Total Costs	Passenger Revenue	Operating Deficit
Montreal-Quebec	15,123	7,120	22,243	5,473	16,500
Montreal-Ottawa	10,498	5,518	16,016	4,544	11,472
Ottawa-Toronto	9,680	7,735	17,415	7,575	9,840
Toronto-Montreal	63,257	39,972	101,229	41,441	59,788
Toronto-Kingston	2,118	933	3,051	987	2,064
Toronto-Windsor	25,057	15,779	40,836	13,196	27,640
Toronto-Stratford-London	11,581	5,138	16,719	4,614	12,105
Toronto-Sarnia	14,206	6,492	20,698	5,098	15,600
Toronto-Niagara Falls	4,682	1,836	6,518	1,489	5,029
Total	156,202	88,523	244,725	84,687	160,038

Exhibit 3.3

Financial Performance of Corridor Services, 1984

	Cost per passenger $	Revenue per passenger $	Deficit passenger $	Cost per pass-km ¢	Revenue per pass-km ¢	Deficit per pass-km ¢	Revenue/ Cost %
Montreal-Quebec	61	16	45	27.9	7.3	20.6	26
Montreal-Ottawa	43	12	31	26.2	7.4	18.8	28
Ottawa-Toronto	53	23	30	17.5	7.5	10.0	43
Toronto-Montreal	65	27	38	17.0	7.0	10.0	41
Toronto-Kingston	40	13	27	23.2	7.6	15.6	32
Toronto-Windsor	51	16	35	24.2	7.9	16.3	32
Toronto-Sarnia	50	12	38	30.6	7.5	23.1	25
Toronto-Stratford-London	27	8	19	26.8	7.4	19.4	28
Toronto-Niagara Falls	26	6	20	28.4	6.5	21.9	23
Average	51	18	33	20.8	7.3	13.8	35

load factor and the operating cost. From the available data, however, it is not possible to determine the extent to which each of these factors affects the financial performance of specific routes. Service frequencies can be obtained from VIA's published timetables, but since the type of equipment and consist size vary, seating capacity of the trains cannot be determined. Thus, although passenger-kilometres on each route are known, load factors cannot be measured. Similarly, although total operating costs are known, unit costs on a car-kilometre or seat-kilometre basis cannot be determined.

Given these data limitations, only the average unit cost per train kilometre can be estimated for the corridor as a whole. Using published service frequencies and route distances, total train-kilometres operated in the corridor in 1984 are estimated at 9.5-10 million, which, for total operating costs of $245 million, translates to approximately $25 per train-kilometre. For an average train-consist of four cars, this in turn translates to $6.25 per car-kilometre, and for an average car capacity of 75 seats, 8¢ per seat-kilometre. Given the average cost of 20¢ per passenger-kilometre calculated from the available operating statistics, the average load factor in the corridor can be estimated at approximately 40 percent.

Rail passenger operating costs fall into two basic categories: corporate costs and payments made to the railways as dictated by CTC costing regulations. In 1984, these two categories represented 36 percent (or $9 per train-km) and 64 percent ($16 per train-km) of total operating costs in the corridor, respectively. Corporate costs include VIA's own overhead, marketing and reservations, onboard services, and other expenses that the corporation incurs directly. There is no current information available on the relative magnitude of these cost items, but based on system-wide averages obtained from previous studies, it can be estimated that onboard service and general administration each account for 35 percent, and marketing/reservations and station-related expenses incurred directly by the corporation (i.e., in addition to station-related railway charges) each account for 15 percent of the estimated $9 per train-km.

Railway charges are grouped into eight categories as shown in the first column of Exhibit 3.4.[4] The largest component is administrative charges, including payroll and other overhead items, which are estimated at $5.70 per train kilometre. Equipment maintenance, line-haul costs (including switching) and train crew costs represent the next three largest components ($3.10, $2.40 and $2.20 per train-kilometre respectively). Fuel costs, capital charges (including depreciation and rental) and station expenses constitute the remaining but less significant components of railway charges ($1.20, $1.00, and 40¢ per train-kilometre respectively).

In assessing the financial performance of rail passenger services, it must be noted that the current cost structure is highly inflated due to certain inefficiencies in the present system. These inefficiencies stem, in part, from institutional problems that provide VIA with little control over its costs and the railways with little incentive to improve operating efficiency. Another contributing factor is VIA's own management. An indication of potential savings, therefore, is also shown in Exhibit 3.4 and discussed further, below.

The railways perform train and line-haul operations on behalf of VIA under operating agreements, and pass on the full costs of these services in accordance with CTC costing regulations. Under these arrangements, VIA is currently not in a position to negotiate specific charges for the functions performed by the railways. If VIA were to be given the freedom to negotiate fixed-price contracts (similar to the confidential contracts that any shipper would be able to enter into with the railways under proposed federal legislation) there may be significant opportunities for reducing railway charges.

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[4] The distribution of railway charges is based on a study of 1980 costs (Adil Cubukgil and Richard M. Soberman, The Cost of Rail Passenger Services in Canada: An Examination of Institutional Problems (Toronto: University of Toronto-York University, Joint Program in Transportation, 1984).

Exhibit 3.4

Estimates of Operating Costs

	Unit Cost ($/train-km)	Improved Unit ($/train-km)	Savings ($/train-km)	Savings %
VIA Costs				
Onboard services	3.10	2.00	1.10	35
Station services	1.40	0.50	0.90	65
Marketing reservations	1.40	0.50	0.90	65
General administration	3.10	1.00	2.10	68
Total	9.00	4.00	5.00	55
Railway Charges				
Station expenses	0.40	0.40	-	-
Train crews	2.20	1.00	1.20	55
Fuel	1.20	1.20	-	-
Equipment maintenance	3.10	2.00	1.10	35
Switching-linehaul	2.40	1.50	0.90	38
Administration-overhead	5.70	1.40	4.30	75
Capital depreciation	1.00	1.00	-	-
Total	16.00	8.50	7.50	47
TOTAL	25.00	12.50	12.50	50

Some of the most apparent inefficiencies in current rail passenger operations concern train crew costs. The major factors contributing to high crew costs are wages arising from outdated work rules and overstaffing of train crews. The magnitude of potential savings in dealing with these factors can be demonstrated quite simply. At an average speed of 80 kilometres per hour and an hourly wage of $30, the cost of a two-man crew would be 75¢ per train-kilometre. Allowing for a one-third margin for deadheading and other scheduling problems, crew costs should be approximately $1.00 per train kilometre compared with the current cost of $2.20 per train-kilometre. Under the existing costing arrangements, the railways have no incentive to either negotiate for reasonable work rules with their unions or to improve crew scheduling practices; they simply pass their costs on to VIA.

Another area for significant savings is equipment maintenance. VIA's lack of direct control over maintenance performed by the railways has been central to problems with equipment maintenance. Under current contractual arrangements, it is difficult for VIA to influence the railways to modify maintenance practices, largely because of a lack of sufficient railway incentives to improve either efficiency or quality. It is difficult to estimate how much VIA could save as a result of entering into maintenance contracts directly with the railways or performing maintenance functions itself. In view of the Amtrak experience in the U.S. and GO-Transit experience in Ontario, however, 50¢ per car-kilometre appears a reasonable target for VIA to achieve. In the corridor, for an average-sized train of four cars, equipment maintenance costs would then be $2.00 per train-kilometre, compared with the current cost of $3.10 per train-kilometre.

Linehaul-related costs are also a major component of railway charges. These costs, of course, are dictated by CTC regulations and may not necessarily reflect the actual marginal costs of running passenger trains on infrastructure that accommodates mixed traffic. It is difficult to establish a reasonable amount which VIA should be paying the railways for running its trains on railway infrastructure. However, if VIA were given the

freedom to negotiate fixed-price contracts directly with the railways, and if the railways realized that the viability of passenger services was at stake, significant savings might be realized. In the corridor, VIA payments constitute a significant revenue source for CN. Accordingly, CN is likely to be sensitive to VIA's needs in order to maintain rail passenger service (particularly under the pending new legislation) and the associated contribution to its own revenue base. Based on various cost estimates prepared during planning and development studies for corridor improvements, a reasonable unit charge may be in the order of $1.50 per train-kilometre, compared with the current $2.40 per train-kilometre.

Perhaps the single largest problem facing the rail passenger system is the overhead burden. The administrative costs the railways pass on to VIA are in accordance with CTC regulations, and they are estimated to account for approximately 35 percent of all railway charges in the corridor. This means that the existing costing regulations allow the railways to mark up the direct charges (excluding capital) by more than 60 percent. Overhead costs are, of course, indirect charges that are allocated to rail passenger services from railway's total overhead.

At 60 percent of direct charges, the contribution of passenger services to the railway's overhead appears excessive. A 20 percent contribution would lower the administration charges with respect to corridor services to under $2.00 per train-kilometre, a substantial reduction from the current level of $5.70 per train-kilometre. If the direct charges could also be reduced in accordance with the targets suggested above (i.e., $1.00 per train-kilometre for crew costs, $2.00 for equipment maintenance, and $1.50 for linehaul charges), the administrative costs at 20 percent would be only $1.40 per train-kilometre.

If all these savings could be achieved, total railway charges would be reduced from $16.00 to $8.30 per train-kilometre. These unit cost targets, which are believed to be reasonable, together with the corresponding savings from the estimates of current costs, are shown in Exhibit 3.4.

There is also considerable scope for savings in VIA's own expenditures. Given the rather limited role VIA plays in the provision of rail passenger services as a broker between the government and the railways, the general administration burden ($3.10 per train-kilometre in the corridor) is clearly excessive. Again, it is difficult to establish an appropriate level of expenditure for the general coordination and management function that VIA plays, but $1.00 per train-kilometre may be a reasonable target.

Another area where VIA could achieve significant savings is in the provision of onboard services. In its own planning and development studies for system improvements in the corridor, VIA had estimated that onboard services could be provided for under 50¢ per car-kilometre, or $2.00 per train-kilometre for an average four-car-consist (compared with the $3.10 it currently spends). Allowing 50¢ per train-kilometre each for station services and marketing-reservations functions, VIA's own costs in the corridor could be lowered to $4.00 per train-kilometre (a saving of $5.00 per train-kilometre). Together with savings in railway charges estimated above, this should lower the average cost of corridor operations to just under $12.50 per train-kilometre, or about one-half of what VIA is currently estimated to spend.

With these estimates of potential savings, the total operating cost of corridor services would be reduced from $245 million to $125 million without introducing any service changes. At current fares and ridership levels, even this 50 percent reduction in operating costs would not achieve full cost recovery; the revenue-to-cost ratio would increase to 68 percent. Full cost recovery in the corridor would only be achieved if ridership increased to improve the average load factor from the current 40 percent to 60 percent resulting in revenues, at current fare levels, of $127 million.

In practice, of course, it is highly unlikely that the full extent of the estimated savings in operating costs could be achieved immediately. In order to achieve financial viability, therefore, some increase in fares appears inevitable. For example, if operating costs could be reduced by

35 percent and the load factor increased from 40 to 60 percent, an average fare increase of 25 percent would be necessary to achieve full cost recovery. Under this scenario, unit costs would decline to about $16 per train-kilometre, $4.00 per car kilometre (for an average four-car consist), and 5.3¢ per seat-kilometre (for an average 75-seat car). At a 60 percent load factor, the average revenue per passenger-kilometre would have to increase to approximately 9¢ from the current average of 7.3¢ per passenger-kilometre.

Although very little is known about the price elasticity of demand for rail travel on corridor-type routes, any increase in fares will obviously result in some reduction in demand. With reliable service and convenient schedules, however, fare levels of approximately 9¢ per passenger-kilometre are unlikely to inhibit the necessary growth in ridership required for full cost recovery. If travel market conditions do not permit the necessary combined increases in both fares and ridership, some degree of service rationalization may be required. Any reduction in service frequency or change in service patterns (e.g., consolidation of existing London, Windsor, Sarnia services) will not only reduce operating costs but will also increase load factors if the same level of ridership can be retained.

In summary, although the current financial performance of corridor services is very poor, there appear to be opportunities for significant improvements and even full cost recovery through a combination of cost reductions, fare increases, ridership increases, and if necessary, service changes. The analysis presented above has focused on the corridor as a whole, since unit costs cannot be estimated on a route-specific basis. Naturally, the market potential of each route is different, and while such routes as Ottawa-Toronto and Montreal-Toronto, where the current revenue-to-cost ratios are above 40 percent may be able to move towards full cost recovery fairly easily, other routes (e.g., Toronto-Niagara Falls) may never achieve it. More detailed data are required to address these issues at a route-specific level.

3.4 Bus and Air Service Characteristics

The principal intercity bus operator on routes to the east of Toronto is Voyageur Colonial Limited. Southern Ontario routes to the west of Toronto are served mainly by Gray Coach and Greyhound. The air carriers operating on corridor routes include the two national carriers, Air Canada and CP Air, as well as regional and commuter carriers, Nordair, Quebec Air, City Express and Air Ontario. Bus and air service characteristics are shown in Exhibit 3.5 along with basic rail service characteristics which are also shown for comparative purposes.

Quebec City-Montreal

Voyageur operates 21 daily express services between Montreal and Quebec. Scheduled travel time of 3 hours and 5 minutes is the same as express rail service through Drummondville. In addition there are five local services, three of which are through Trois-Rivieres and two through St. Hyacinthe (scheduled travel time of these local services varies between four and five hours). Buses leave both Montreal and Quebec on the hour, between 6:00 a.m. and 1:00 a.m. The one-way bus fare of $24.25 is only marginally lower than the rail fare of $25.00.

There is frequent air service between Quebec and Montreal. Flying time is 35-45 minutes. There are 11 departures on a typical week day, four of which are provided by Air Canada and seven by Quebecair. The one-way air fare of $100 is considerably more expensive than the surface modes.

Montreal-Ottawa

Voyageur operates 16 daily express departures between Montreal and Ottawa, leaving in both directions every hour between 6:00 a.m. and midnight (except for 11:00 a.m., 1:00 p.m., and 11:00 p.m.) The scheduled travel time for the express services is 2 hours and 20 minutes. In addition, there are three local services through Brockland, Hawkesbury, and Dorion, which take 3½ to 4 hours. The one-way bus fare between Montreal and Ottawa is $14.95 compared to the $18.00 rail fare.

Exhibit 3.5

Service Characteristics in the Corridor: Rail, Bus and Air

	Rail			Bus			Air		
	Service Frequency[1]	Scheduled Time[2]	One-way Fare $	Service Frequency	Scheduled Time	One-way Fare $	Service Frequency	Scheduled Time	One-way Fare[3] $
Quebec-Montreal	3(3)	2:50	25.00	21	3:05	24.25	11	0:40	100
Montreal-Ottawa	6	2:05	18.00	16	2:20	14.95	18	0:30	90
Ottawa-Toronto	2(2)	4:07	39.00	5(4)	4:30	32.00	36	0:50	111
Montreal-Toronto	5(2)	4:45	44.00	4	6:10	35.00	38	1:10	134
Toronto-Windsor	4(1)	4:05	33.00	9(5)	4:50	25.75	8	0:50	110
Toronto-Sarnia	1(2)	3:15	26.00	-	-	-	4	0:50	110
Toronto-London	9(4)	2:15	18.00	12(3)	2:20	13.80	8	0:35	90
Toronto-Niagara	3	1:55	12.00	17	1:25	12.30	-	-	-

1 Service frequency for all modes refers to average daily departures in each direction. Bracketed figures refer to local services

2 Scheduled time for all modes is shown in hours and minutes only for the fastest service

3 Variation in air fares is considerable being as low as $49 for Toronto-Ottawa and $59 for Toronto-Montreal

Air Canada offers seven daily flights and Nordair four daily flights between Montreal and Ottawa. In addition, Air Ontario flies three times a day, First Air twice a day and City Express four times a day. The flying time on this route is 30-35 minutes. The regular one-way economy fare is $90, but City Express offers a one-way fare at $59.

Ottawa-Toronto

Voyageur provides five daily express services between Ottawa and Toronto, which take 4 hours and 30 minutes, and 4 additional semi-express services (one through Peterborough and three through Kingston) which take 5 hours and 30 to 45 minutes. There are also three local services through Peterborough which take 6½-7 hours, providing intermediate stops along the route. In total, Voyageur provides 13 departures a day between Ottawa and Toronto. One-way regular bus fare of $32 is less than the corresponding rail fare of $39.

The two national airlines provide 22 flights a day between Ottawa and Toronto (Air Canada, 16 and Canadian Pacific, six). In addition, Nordair provides four daily flights, Torontair, two flights (using propellor Beechcraft from the Buttonville Airport), and City Express eight flights (using Dash-7 aircraft from the Toronto Island Airport). In total, there are 36 flights a day between Ottawa and Toronto. The regular one-way economy fare is $111, but some of the carriers offer fares as low as $49. (Nordair offers this fare on a "walk-on" basis, but City Express provides advanced reservations and ticketing for the same amount during off-peak hours and weekends).

Montreal-Toronto

Voyageur provides four express services between Montreal and Toronto, stopping at Cornwall and Kingston. The scheduled travel time on these express services varies between 6 hours and 10 minutes to 6 hours and 45 minutes. There are additional services on this route that operate between Montreal and Cornwall, Cornwall and Toronto, Kingston and Toronto, and Montreal and Belleville. The one-way regular bus fare between

Montreal and Toronto is $35 (some 25 percent less than the regular rail fare).

The Montreal-Toronto route receives the most frequent air service in the country, with 19 daily flights by Air Canada and five by CP. The regional air carriers, Nordair and Quebecair, operate seven and two flights a day respectively (increased to three in April, 1986). Scheduled travel time on these flights is 1 hour and 10 minutes. The regular air fare between Montreal and Toronto is $134, but the regional carriers offer one-way fares as low as $70. In addition to the regular flights of the national and regional carriers, City Express provides ten daily flights from the Toronto Island Airport to Montreal. One-way fare on these flights (with advanced reservations and no other restrictions) is $89, and as low as $59 during off-peak hours and weekends.

Toronto-Windsor

Greyhound Lines provides nine departures a day on the Toronto-Windsor route. Four of these services are express with a scheduled travel time of 4 hours and 50 minutes to 5 hours and 10 minutes, stopping only at London; one of these services also stops at Hamilton. Three others are semi-express, with scheduled travel time varying between 5 hours and 30 minutes and 6 hours and 30 minutes, stopping at Hamilton, Brantford, Woodstock, London, and Chatham, as well as making additional intermediate stops between London and Chatham. The remaining two are local services which take as long as 7 hours and 45 minutes and also serve intermediate communities between Chatham and Windsor. The one-way bus fare between Toronto and Windsor is $25.75 (almost 30 percent lower than the rail fare).

There are seven flights a day between Toronto and Windsor, four by Air Canada and three by Nordair. Scheduled flying time is 50 minutes, and the regular one-way airfare is $110. Air Ontario also provides a daily flight between Toronto and Windsor using Convair aircraft.

Toronto-Sarnia

There is no direct bus service between Toronto and Sarnia. There are connections, however, through London. Charterways operates twice a day (except Saturdays, Sundays and holidays) between London and Sarnia. The only through connection from Toronto to Sarnia is by Greyhound leaving at 10:30, connecting with Charterways in London at 14:20, and arriving at Sarnia at 16:30 (a total travel time of six hours). In the opposite direction both Charterways departures from Sarnia can connect with Greyhound in London, but the travel time is still six hours or more. The sum of Toronto-London and London-Sarnia bus fares (approximately $32) is 25 percent more than the direct rail fare of $26.

Although the bus connection is fairly poor, there is reasonably good regional air service between Toronto and Sarnia. Air Ontario provides four flights a day (using Convair aircraft) with a scheduled travel time of 50 minutes. Given the fairly short distance, however, the one-way air fare of $110 is expensive.

Toronto-London

Because of its strategic location, London receives good bus service. All the Greyhound buses between Toronto and Windsor (nine departures a day) stop at London. Greyhound provides three additional departures a day (one express, one semi-express, and one local) between Toronto and London. Scheduled travel time between Toronto and London varies between 2 hours and 20 minutes on the express service and 3 hours and 40 minutes on local service (stopping at Mississauga, Hamilton, Brantford, Paris, Woodstock, and Ingersoll). In addition, Gray Coach provides three departures a day through Guelph, Kitchener, and Stratford. The scheduled travel time on this route varies between 3 hours and 30 minutes and 4 hours and 20 minutes. In total, therefore, there are 15 daily departures between Toronto and London, nine of which take less than three hours. The one-way bus fare of $13.80 between Toronto and London is some 30 percent less than the rail fare.

Regular air service between Toronto and London is provided by Air Ontario, with eight daily departures. The scheduled flight time by Air Ontario's Convair aircraft is 35 minutes. In view of the fairly short distance between the two cities, the Toronto-London route receives excellent air service. The one-way air fare of $90, however, is considerably higher than bus and rail.

Toronto-Niagara Falls

The principal bus operator between Toronto and Niagara Falls is Gray Coach, providing 12 departures a day. The scheduled travel time of this service varies between 1 hour and 25 minutes and 2 hours, depending on the number of intermediate stops (Burlington, Grimbsy, St. Catharines). In competition with Gray Coach, Greyhound also provides five daily departures between Toronto and Niagara Falls. Canada Coach Lines is another competitor on part of this route between Niagara Falls and Hamilton. The one-way bus fare between Toronto and Niagara Falls is $12.30, marginally higher than the rail fare. There is no regular air service between Toronto and Niagara Falls.

3.5 Comparison of Modal Alternatives

The financial performances of rail services in the corridor were examined in detail earlier in this chapter. Although unit costs could not be determined on a route-specific basis, for the corridor as a whole, it is estimated that unit costs are about $25 per train-kilometre and 8¢ per seat kilometre. At an average load factor of 40 percent, the corresponding cost per passenger-kilometre is about 20¢. By contrast, the cost of intercity bus operations averages $1.35 per vehicle kilometre which, for a typical 44-seat bus translates to 3¢ per seat-kilometre. The bus mode also achieves higher load factors than rail. On average, it is estimated that typical load factors on intercity buses in the corridor are in the fifty to sixty percent range. At these load factors, the unit cost of 3¢ per seat-kilometre translates to 5¢-6¢

per passenger-kilometre.[6] Thus, the bus mode offers a very significant cost advantage in comparison to rail.

In comparing the cost differences between modes, other level of service attributes must, of course, be considered. It is generally perceived that rail is a more comfortable means of intercity travel than conventional bus. Moreover, on most of the corridor routes, rail provides faster service. On the other hand, much higher service frequencies are provided by the bus mode on most corridor routes. Even if the frequency of rail service could be increased to levels comparable to bus, however, it is unlikely that the more comfortable (and, in some instances, faster) service rail provides could be justified at three to four times the cost of bus (i.e., on a passenger-kilometre basis). If the improvements discussed above could be achieved to reduce rail costs to 4¢-5¢ per seat-kilometre, or 8¢-9¢ per passenger-kilometre, the tradeoff between cost and comfort would perhaps fall into a reasonable range; in other words, more comfortable service on rail might be justified at an additional cost of 3¢-4¢ per passenger-kilometre.

It is also interesting to compare the current cost performance of rail in the corridor to the air mode. On most corridor routes, the air mode clearly offers a considerable travel-time advantage. In spite of this significant advantage, however, the cost of air services does not appear to be much higher than rail. In the absence of adequate data, rail and air costs cannot be directly compared, but given that most air services in the corridor are commercially viable, air fares provide a reasonable basis for comparison with rail costs. For the two longest routes in the corridor, Montreal-Toronto and Ottawa-Toronto, rail costs for passengers travelling the entire lengths of the routes are $92 and $78 respectively.[7]

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[6] Adil Cubugkil and Richard M. Soberman, Bus-Rail Competition in High Density Travel Corridors: An Examination of Policy Issues (Toronto: University of Toronto-York University Joint Program in Transportation, 1985).

[7] These costs can be obtained by multiplying the cost per passenger-kilometre shown in Table 3.2 (70.0¢ and 70.5¢ respectively) with route length (539 kilometres and 440 kilometres respectively).

Although these costs are lower than the regular fares offered by Air Canada and CP ($134 and $111 respectively), they are about the same as City Express regular fares of $89 and $79. Rail costs are higher than City Express off-peak and weekend fares of $59 and $49. On other corridor routes, air fares are as not as low as rail costs, but differences are not that significant. Between Toronto-Windsor and Toronto-Sarnia, for example, rail costs of $87 and $86 respectively are 20 percent lower than the one-way regular fare of $110. If these routes were also served by a low-cost commuter airline, such as City Express, air fares could be lower than the rail costs.

The above comparisons suggest that there is little justification for the continuation of rail services at current cost levels. If the financial performance of rail could be improved through a combination of cost reductions, load factor improvements and fare increases, there may be a reasonable role for rail to play in the intercity travel markets of the corridor. Although rail would be unable to match the frequency of bus service, due to its inherent level of service advantages (i.e., comfort, onboard amenities, speed), it should be able to command a higher fare than bus. If the level of service could be further improved through better scheduling, reliability and passenger services (e.g., reservation and ticketing), it is quite conceivable that the rail mode could increase its market share even at higher fares. However, while improving its relative position against the bus mode, rail may come under increasing pressure from the upper end of the market as a result of airline deregulation, and in particular the entry of low-cost commuter airlines. The air mode would still find it difficult to penetrate the shorter markets, but may adversely affect the prospect of improved rail service on routes such as Ottawa-Toronto and Montreal-Toronto.

Another challenge to rail could be improved bus services. Since the bus companies at present face intense price competition from rail, they are not in a position to contemplate major investments in improved bus designs and station facilities. A recent study has estimated that the operating costs

of a 22-seat bus with an attendant and meal service would be about 6¢ per seat-kilometre.[8] With such low seating capacity, buses will be able to operate with much higher load factors, and keep per passenger-kilometre costs below the level estimated for rail with all of the potential improvements (i.e., cost reduction and a higher load factor). In today's environment, where VIA is not obligated to achieve any particular cost-recovery target, bus operators fear that they will not be able to raise fares sufficiently to justify new capital investment and higher operating costs. If rail fares increase, however, bus operators will be in a better position to contemplate such improvements in service.

In summary, in view of travel alternatives offered by bus and air, the current cost of rail services cannot be justified. There is, however, potential for significant improvements in rail's financial performance through cost savings and improvements in equipment utilization (i.e., load factors). Under these improved conditions, some (perhaps most) corridor rail services could achieve full cost-recovery with modest fare increases. However, lower air fares and/or improved bus services, which have to be seen as possible developments in the corridor in the near future, may adversely affect the prospects of financial viability in rail passenger operations. In any event, it is difficult to justify the continuation of rail passenger services in the corridor unless full cost recovery (or at least near full cost recovery) can be achieved.

In view of the alternative bus and air services described in the previous section, the "public need" argument in favour of retaining highly subsidized rail service does not appear to be very strong. On the Quebec-Montreal and Montreal-Ottawa routes, bus service frequency is much higher (21 and 16 daily bus departures respectively, compared with six daily rail

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[8] Marshall, Macklin, Monaghan Ltd., Study of Intercity Surface Transportation Alternatives (Montreal: Transportation Development Centre, 1985).

departures on both routes) and bus travel times are only 10 to 15 minutes longer than rail. Moreover, both these routes receive frequent air service (11 and 18 daily departures respectively). On the longer Ottawa-Toronto and Montreal-Toronto routes, bus frequency is not as high as Quebec-Montreal and Montreal-Ottawa, and the travel-time advantage offered by rail is more significant. However, the cost of rail is also significantly higher and it is difficult to identify a transportation need which otherwise would not be met if rail service were to be discontinued. The bus mode offers a low-cost surface alternative, and some of the lower air fares (especially those offered by City Express) are not much higher than rail fares. Although the conventional air fares are still much higher (2.5 to 3 times higher than rail), these two routes with 36 and 41 flights a day, respectively, receive excellent air service.

In the southwestern section of the corridor, the rail mode offers certain advantages that may warrant providing some support, but again, the critical question is whether the current level of subsidy can be justified. Due to its strategic location, the Toronto-London route receives very frequent service and offers a slight travel-time advantage over bus. Between Toronto and Sarnia, there is only limited rail service (three departures a day), but no direct bus service. Rail frequency between Toronto and Windsor is only one-half of that offered by bus, but the rail travel time is approximately 45 to 60 minutes shorter. London, Sarnia and Windsor all receive air service, although air fares are significantly higher than bus and rail. There is little justification for the Toronto-Niagara Falls rail service, since the bus mode offers more than five times as many daily departures and an express travel time which is half an hour shorter than by rail (which has the lowest cost-recovery ratio of all rail services in the corridor).

4. Atlantic Canada

4.1 Introduction

There are five regional rail services in Atlantic Canada which are all operated with one or two car RDC units. Two of these services operate in Nova Scotia (Halifax-Sydney and Halifax-Yarmouth), two in New Brunswick (Moncton-Edmundston and Moncton-Campbellton), and one between the two provinces (Halifax-Moncton-St. John). The 381,000 passengers carried on these routes in 1984 accounted for six percent of the national total. Given the relatively short travel distances, these routes represented only about three percent of total passenger-kilometres. Passenger revenues recovered only 21 percent of the total cost of operating these routes, yielding a deficit of about $16.5 million (3.5 percent of VIA's total operating deficit).

In the following section, the characteristics of these rail services are described in more detail and compared to bus and air services available on the same routes. This is followed by an examination of the financial performance of rail services and an assessment of the potential for improvements. Finally, rail costs are compared with the bus and air modes, and opportunities for substituting bus and air services for the existing regional rail services are identified.

4.2 Service Characteristics

The service characteristics on the five Atlantic Canada routes where VIA rail currently operates regional service are shown in Exhibit 4.1. The highest volume routes are Halifax-Sydney and Halifax-St. John, which carried 170,000 and 113,000 passengers respectively in 1984. The passenger volumes on Halifax-Yarmouth and Moncton-Campbellton were 60,000 and 33,000 respectively. The volume between Moncton and Edmundston was very low in 1984 because service was reinstated only late that year (having been discontinued altogether in 1981). As the average trip distances (which are much lower than total route distances) suggest, there is considerable intermediate travel on all the regional routes.

Exhibit 4.1

Atlantic Region Rail Service Characteristics

	Route Distance (km)	Passengers	Passenger kilometres (000's)	Average Trip length (km)	Service Frequency (weekly departures)	Scheduled Travel Time (hours:min)	One-way regular fare ($)
Halifax-Yarmouth	348	59,761	11,456	192	7	5:25	26.00
Halifax-Sydney	473	170,955	33,922	198	15	6:45	32.00
Halifax-St. John	449	113,344	23,024	203	7	6:00	32.00
Moncton-Edmunston	372	3,494	971,332	278	3	4:30	31.00
Moncton-Campbellton	301	33,409	6,587	197	7	3.42	25.00
Total	N/A	380,963	75,960	200	N/A	N/A	N/A

Characteristics of the bus and air services on the five regional routes are summarized in Exhibit 4.2. The principal intercity bus carriers in the region are Acadian lines in Nova Scotia and SMT (eastern) in New Brunswick. Air service is provided by Air Canada and CP Air, as well as Eastern Provincial Airway (EPA). EPA has been providing intra-regional service with its Air Maritime fleet of turboprop aircraft, but the airline has recently announced its decision to gradually phase out these services. The current CP-EPA strategy is to incorporate some of the intra-regional services into their inter-regional route structure and use Air Atlantic (a Newfoundland company that plans to operate regional services using Dash-8 aircraft) as a feeder line to replace the existing services of Air Maritime. It is also expected that Air Nova, formerly Labrador Airways, will soon establish a network of regional services, using STOL aircraft. Two other smaller companies, Hummingbird Ltd. and Air Bras d'or, also have applied for service between various New Brunswick and Nova Scotia points. Thus, the structure of air services in Atlantic Canada is quickly changing in response to the new regulatory environment. (The air services shown in Exhibit 4.2 and described in more detail below may have already changed.)

Halifax-Sydney

Rail services between these cities is provided on the 473-kilometre CN route through Truro and Port Hawkesbury, serving 17 communities between Halifax and Sydney. Daily trains depart from Sydney in the morning (8:17), arriving at Halifax at 14.58, and leave Halifax for the return trip at 16:11, arriving at Sydney late at 22:51. An extra service is provided on Fridays from Halifax to Sydney (departing 17:50, arriving 00:30) and on Sundays from Sydney to Halifax (departing 15:13, arriving 23:58). In addition, weekday service is provided between Halifax and Port Hawkesbury, departing from Halifax early in the morning (7:00), arriving at Port Hawkesbury (11:02), and departing for the return trip from Port Hawkesbury (19:50), arriving at Halifax (22:05).

The Halifax-Sydney route is served by Acadian lines with four daily departures in each direction; there is also a daily service between Halifax

Exhibit 4.2

Bus and Air Services in Atlantic Canada

	Bus			Air		
	Service Frequency (weekly dep.)	Travel Time (hours:min)	One-way Regular Fare ($)	Service Frequency (weekly dep.)	Travel Time (hours:min)	One-way Regular Fare ($)
Halifax-Yarmouth	14(7)[1]	7:20(5:20)	21.50	7	0:40	100.00
Halifax-Sydney	28	6:45	24.75	28	0.45	107.00
Halifax-St. John	14	5:30	-	28	0.40	93.00
Moncton-Edmunston	28	7:45	33.20	-	-	-
Moncton-Campbellton	14	7:00	24.80	-	-	

[1] The figures in brackets are for the McKenzie Bus Line service along the south shore

and Antigonish (about half-way to Sydney). Two of these daily departures are express services (one serving Antigonish and the other also serving Truro, New Glasgow, Port Hawkesbury and Baddeck). The other two serve all the local communities between Halifax and Port Hawkesbury; beyond Port Hawkesbury, one service continues along the Trans-Canada Highway to Sydney, while the second takes the southern route through St. Peters. The scheduled travel time by express service is about the same as by rail (6 hours and 45 minutes), but the local services take longer (approximately 8 hours). The one-way bus fare between Halifax and Sydney is $24.75, about 25 percent cheaper than the rail fare of $32. The bus mode, therefore, offers more frequent and cheaper service, but may not provide the same level of passenger comfort.

The Halifax-Sydney route also receives fairly frequent air service. Air Canada operates twice a day en route to Ottawa and Montreal. EPA provides provides service as part of its multi-stop routes to St. John's, Newfoundland. In addition, Air Maritime provides daily service with turboprop aircraft. The flight time is about 45 minutes, but the regular one-way air fare of $100 is significantly higher than bus and rail. With four flights a day, there is sufficient flexibility for same-day return travel between Halifax and Sydney. Neither of the surface modes are fast enough to offer same-day return service on this route (Antigonish being the practical limit of a same-day return trip from either Sydney or Halifax).

Halifax-Yarmouth

Rail service on this route is operated on the CP line along the northwest shore through Kentville, serving 35 intermediate communities. Daily trains depart from Yarmouth in the morning (7:00), arrive at Halifax shortly after noon (12:25), and depart for the return trip from Halifax early in the evening (18:05), arriving at Yarmouth shortly before midnight (23:30). The scheduled travel time is 5 hours and 25 minutes, and the regular one-way fare is $26. With a six-hour layover in Halifax, the current schedule offers some flexibility for same-day return for passengers travelling from Yarmouth to Halifax (but not for those travelling in the opposite direction).

Acadian lines operate two services a day between Halifax and Yarmouth, serving all the local communities along the north shore. There is an additional daily service between Halifax and Middleton, which is about halfway to Yarmouth. The one-way bus fare of $21.50 between Halifax and Yarmouth is cheaper than rail, but the scheduled travel time of 7 hours and 20 minutes is longer than rail. Daily bus service between Halifax and Yarmouth is also provided along the south shore by McKenzie Bus Line, and the travel time on this route is about the same as rail on the north shore route.

The Halifax-Yarmouth route is served only once a day by Air Canada en route between Halifax and Boston. The air fare on this 40-minute flight is $100. As regional air services expand in Atlantic Canada, there may be scope for more frequent service between these two cities. The intermediate communities on this route, however, will continue to rely on the two surface modes.

Halifax-St. John

Daily regional service operates between Halifax and St. John on the CN Line through Truro and Moncton. Trains depart Halifax at 8:15, arriving at St. John early at 14:10, and leave for the return trip at 16:00, arriving at Halifax in the evening 21:58. This route is also served by the overnight train to Montreal through northern Maine and Sherbrooke, Quebec (i.e., the Atlantic). The Atlantic departs daily from Halifax mid-day and arrives at St. John early in the evening (in the opposite direction, departure from St. John is also mid-day arriving in Halifax early in the evening.) The scheduled travel time is nearly six hours and the one-way fare is $32.

There are two daily bus services on this route operated by the two major carriers in the region, Acadian Lines and SMT which have interlining arrangements at Amherst. One of these is an express service with a scheduled travel time of 5 hours and 30 minutes (i.e., 30 minutes faster than the RDC service). The second service stops at local communities between

Halifax and Amherst and has a longer connection time at Amherst with the SMT departure to Moncton and St. John; scheduled travel time on this service is 7 hours and 30 minutes. Thus, the bus mode offers the same frequency as rail, a slight travel-time advantage (at least in the case of express service), and a slightly lower fare (the two carriers interlining this route do not offer a combined fare, but the sum of the Acadian Line fare from Halifax to Amherst and the SMT fare from Amherst to St. John is still lower than the regular rail fare).

Both Moncton and St. John receive frequent air services to and from Halifax. Air Canada provides daily service between Halifax and St. John en route to Boston, and EPA serves these two cities as part of a longer route between Montreal and St. John's, Newfoundland. In addition, Air Maritime provides two turboprop flights a day serving St. John between Halifax and Fredericton. The Halifax-Moncton route is not served by Air Canada or EPA, but Air Maritime operates six direct flights in each direction on this route. The flight schedules between Halifax and both St. John and Moncton offer opportunities for same-day return in either direction. The one-way air fare of $93, however, is considerably more than the bus or rail fares.

Moncton–Campbellton

Rail service between these two cities operates on the CN line serving Newcastle and Bathurst as well as four other smaller communities. Regional service departs from Moncton in the morning (8:30), arrives at Campbellton shortly after noon (12:12), and leaves Campbellton for the return trip in the afternoon (17:00), arriving at Moncton late in the evening (20:45). Scheduled travel time is 3 hours and 45 minutes and the regular one-way fare is $25. This route is also served by the overnight train between Halifax and Montreal which follows the CN route along the St. Lawrence (i.e., Ocean).

Bus service on this route is more limited. SMT provides one departure a day following a more easterly route through Richibucto and Chatham. This route is much longer, and the scheduled travel time of seven hours is

almost twice that of rail. The bus fare of $24.80 between Moncton and Campbellton is about the same as rail. There is a local airport near Campbellton at Charlo, and Air Maritime stops there once a week, although there is no regular service to Moncton. Campbellton may start to receive more frequent air service if the regional air network expands with the establishment of local airlines.

Moncton-Edmundston

The regional rail service on this route operates on the CN line serving seven small communities between Moncton and Edmundston. This service is provided only three times a week, departing from Edmundston early in the morning (7:00), arriving at Moncton late in the morning (11:35), and leaving Moncton for the return trip early in the evening (18:30), arriving at Edmundston later in the evening (23:00).[1]

The main highway connection between Moncton and Edmundston is along the Trans-Canada route through Fredericton, which does not follow the CN route on which regional rail service is provided. SMT provides two daily bus services through Fredericton, serving all the local communities along the route. Although the bus service is more frequent, scheduled travel time of 7 hours and 45 minutes is much longer than rail. The bus fare of $33.20 is slightly more than the rail fare. There is a local airport near Edmundston at St. Leonard which used to be served by Quebec Aviation en route between Fredericton and Quebec City. At present, there is no regular air service between Edmundston and Moncton, but again, with the expansion of the regional air network, Edmundston may begin to receive air service to and from major regional centres (i.e., Moncton, Fredericton, or St. John).

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[1] On Sundays and holiday Mondays, the train leaves Edmundston in the afternoon (7:00), arriving at Moncton in the evening (21:35). The scheduled travel time is 4 hours and 30 minutes and the regular one-way fare is $31.

4.3 Financial Performance of Rail

In 1984, regional rail services in Atlantic Canada carried 381,000 passengers at a total cost of $21.2 million (see Exhibit 4.3). Total passenger revenue was $4.5 million, yielding a deficit of $16.8 million. The largest deficits were incurred on the high-volume routes, Halifax-Sydney and Halifax-St. John ($8.7 million and $6.4 million, respectively). The losses on the Halifax-Yarmouth and Moncton-Campbellton routes were smaller ($3.1 million and $2.7 million respectively), but the latter suffered the highest loss per passenger ($68 per passenger). The cost of the Moncton-Edmundston route was almost insignificant in 1984 because service on this route was reinstated only half-way through the year, having been discontinued in 1981. In addition, this route is only served three times a week compared to at least daily service on the other four routes.

The average cost per passenger was $56, while the average revenue was $12 per passenger (see Exhibit 4.4). Thus, average loss per passenger was $44, and the revenue-to-cost ratio was only 21 percent. The cost-recovery ratio ranged between 25 percent on the Halifax-Yarmouth route and 16 percent on the Moncton-Campbellton route, while the two high-volume routes of Halifax-Sydney and Halifax-St. John achieved a ratio of 21 percent. The two high-volume routes also generated the lowest revenue per passenger, contributing, of course, to their poor financial performance. The unit revenue on the Halifax-Sydney was 5.6¢ per passenger-kilometre, compared with 6.8¢ per passenger-kilometre on the Halifax-Yarmouth route (which also achieved the highest cost-recovery ratio.)

In addition to unit revenues, of course, financial performance is also affected by the unit costs and load factors on each route. As noted in the previous chapter, there is no information available on equipment type and consist size to determine either unit operating costs (i.e., per train-kilometre or car-kilometre) or capacity (i.e., seat-kilometres). However, unlike the the Quebec-Windsor corridor, where both equipment type and train size vary considerably, the situation in the Atlantic is simpler since all routes are operated using one or two-car RDC units. Thus, it is possible to

Exhibit 4.3

Financial Statistics for Atlantic Canada

($ 000's)

Route	Railway Charges	VIA Costs	Total Costs	Passenger Revenue	Operating Deficit
Halifax-Yarmouth	2,098	981	3,079	765	2,314
Halifax-Sydney	6,223	2,557	8,780	1,876	6.904
Halifax-St. John	4,539	1,884	6,423	1,335	5,088
Moncton-Edmunston	167	90	257	62	195
Moncton-Campbellton	2,052	654	2,706	446	2,260
Total	15,079	6,166	21,015	4,484	16,761

Exhibit 4.4

Financial Performance of Atlantic Canada Services, 1984

	Cost per passenger $	Revenue per passenger $	Deficit passenger $	Cost per pass-km ¢	Revenue per pass-km ¢	Deficit per pass-km ¢	Revenue/ Cost %
Halifax-Yarmouth	52	13	39	27.1	6.8	20.3	25
Halifax-Sydney	51	11	40	25.8	5.6	20.2	21
Halifax-St. John	57	12	45	28.1	5.9	22.2	21
Moncton-Edmunston	74	18	56	26.6	6.5	20.1	24
Moncton-Campbellton	81	13	68	41.1	6.6	34.5	16
Average	56	12	44	28.0	6.0	22.0	21

roughly estimate load factors by route. On the two high-volume routes of Halifax-Sydney and Halifax-St. John it is estimated that load factors are higher than the other routes. These relatively higher load factors clearly offset the low unit revenues generated on these two routes.

From the available operating statistics, it is determined that costs per passenger-kilometre are in the range of 26¢ to 28¢ for all routes except Moncton-Campbellton, where costs are as high as 41¢ per passenger kilometre. These variations are obviously due to differences in unit operating costs and load factors. On the Moncton-Campbellton route, for example, both a high unit operating cost per seat-kilometre and a low load factor contribute to high costs per passenger. Since neither of these factors can be estimated with any precision, the extent to which each factor contributes to the observed variations cannot be determined.

Ignoring the variations in cost performance between different routes, however, the operating costs of RDC-type equipment can be examined in more detail. Based on the results of a previous study, the operating costs of regional services in Atlantic Canada are estimated at $13.50 per train kilometre for two-car RDC units, and $10 per train-kilometre for one-car RDC units.[2] These costs translate to 7.5¢ per seat-kilometre for two-car units and 11¢ per seat-kilometre for one-car units.[3]

These operating costs include VIA's corporate costs as well as railway charges. As shown in Exhibit 4.3, VIA's own costs in 1984 were $6 million and railway charges $15 million, representing 29 percent and 71 percent of total operating costs respectively. Using the same ratio, the estimated unit costs of $13.50 per train-kilometre are $3.90 for VIA's own costs and

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2 These estimates are also confirmed by the total operating costs reported for 1984 and estimated train-kilometres for that year.

3 When divided by an average load factor of 30 percent, these unit costs closely approximate costs per passenger-kilometre shown in Exhibit 4.4.

$9.60 for railway charges. As noted earlier in this report, there is no available information on how VIA's own costs are broken down either by route or by type of service. System-wide totals, however, suggest that onboard services and general administration each account for 35 percent, and marketing/reservations and station-related expenses incurred directly by the corporation (in addition to station-related railway charges) each account for 15 percent. Using these shares, onboard services and general administration costs of a typical two-car RDC unit can each be estimated at $1.35 per train-kilometre, and marketing/reservations and station-related expenses each at 60¢ per train-kilometre. This breakdown is shown in Exhibit 4.5.

Although there are no data on how railway charges were broken down in 1984, based on past data, fairly reasonable estimates can be derived.[4] As shown in Exhibit 4.5, the largest railway cost components in the case of Atlantic Canada regional services are crew costs, equipment maintenance and linehaul (including switching) charges, representing $1.70, $1.30, $1.20 per train-kilometre respectively. Capital charges (including depreciation and rental), station expenses and fuel costs constitute the remaining, but less significant, components of railway charges (representing 60¢, 45¢ and 55¢ per train-kilometre respectively). As in the case of corridor services, examined in the last chapter, the single largest railway charge item is still administrative costs (including payroll and other overhead items), which is estimated at $3.80 per train-kilometre. In this case, administrative costs represent an even greater percentage of the total than in the corridor; they represent more than a 70 percent markup over the direct cost items (the comparable figure in the corridor is 60 percent).

These cost estimates, of course, reflect the institutional problems built into the system as well as VIA's own approach to management. As in the provision of corridor services, there is scope for substantial cost savings

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4 The railway charges have not changed as rapidly as VIA's own costs over time, and the functional breakdown of these charges has remained fairly constant.

Exhibit 4.5

Unit Costs of Regional Rail Operations

	Current Costs		Reduced Costs	
	($/train-km)	% of total	($/train-km)	% of total
Railway Charges				
Station	0.45	3.3	0.45	6.50
Crew	1.70	12.6	1.30	18.80
Fuel	0.55	4.1	0.55	8.00
Equipment Maint.	1.30	9.6	1.00	14.50
Linehaul	1.20	8.9	1.00	14.50
Admin. & overhead	3.80	28.3	1.00	14.50
Capital & rental	0.60	4.4	0.60	8.70
Total Railway	9.60	71.2	5.90	85.50
VIA Costs				
Onboard service	1.35	10.0	-	-
Station expenses	0.60	4.4	-	-
Marketing & reservations	0.60	4.4	-	-
General Admin.	1.35	10.0	-	-
Total VIA	3.90	28.8	1.00	14.50
TOTAL	13.50	100.0	6.90	100.0

in terms of both railway charges and costs incurred directly by VIA. Crew wages, for example, are now $1.70 per train-kilometre, which translates to about $110 per hour of actual train operation. Two-man crews, which are clearly sufficient to operate one or two-car RDCs, at $30 per man-hour, and allowing for a 30 percent per margin to cover dead-heading and other contingencies, should cost less than $80 per train-hour. This in turn would translate to a cost of $1.30 per train-kilometre, a saving of almost 30 percent.

There is little doubt that other unit costs could be reduced considerably, particularly if some of the institutional barriers to improved efficiency could be eliminated. For purposes of illustration, possible effects of these reductions are discussed below, recognizing that more detailed analysis and access to basic data would be necessary to check the validity of the assumptions.

Unit equipment maintenance costs of RDCs, for example, appear to be lower than VIA's system-wide average. However, if maintenance costs could be brought down to 50¢ per car-kilometre or $1 per train-kilometre for a two-car RDC unit, the savings would again be in the order of 30 percent. If the costing arrangements were to be changed and VIA permitted to negotiate fixed-price contracts with the railways, linehaul charges could also be reduced from the current costs determined by CTC regulations. Since there is considerable excess rail capacity in Atlantic Canada, VIA may be in a fairly strong position to negotiate for more favourable terms with the railways. If a 20 percent savings could be negotiated, linehaul costs would decline to $1 per train-kilometre.

Savings estimated above amount to 90¢ per train-kilometre for the three direct cost items (i.e., train crew, equipment maintenance and linehaul). The largest potential for savings is, however, still in overheads. If the railways were forced to reduce their overhead burden from the current level to 20 percent, the administrative charges in 1984 would have

been $1 per train-kilometre (a savings of $2.80 per train-kilometre). Moreover, if the above-noted savings in direct cost items could be achieved, with a 20 percent overhead margin, administrative charges would be less than 90¢ per train-kilometre.

There are also significant opportunities for savings within VIA itself. These basically involve the reduction of overheads and improvements in the efficiency of onboard services. Since the railways are primarily responsible for train operations and equipment maintenance, VIA's role is merely one of coordination and management. Given the fairly simple structure of the regional route network in Atlantic Canada, involving only once-daily service on each of the five routes, VIA's coordination and management function can be performed by a very small management team. Station-staffing requirements can be reduced and onboard service costs can be minimized. The type of service that is currently being offered should not warrant any extensive marketing and reservation effort. Although the potential for significant savings may be apparent, it is at the outset still difficult to establish a reasonable level of expenditure for an operating authority like VIA to perform its function effectively. Nevertheless, a reasonable target appears to be about $1 per train-kilometre, rather than the almost $4 per train-kilometre that VIA currently spends.

If all these savings could be achieved, the average operating costs in Atlantic Canada would decline to about $7 per train-kilometre, for which the current level of service (about 1.5 million train-kilometres a year) could be maintained for a total cost of $11 million. This will improve the revenue-to-cost ratio at current fares and passenger volumes, to about 40 percent, but is still far short of full cost recovery. Thus, significant improvements in load factors and increases in fare levels will have to be achieved before total operating costs could be recovered from passenger revenues. If passenger volumes could be doubled without increasing service capacity (i.e., doubling the current load factor from 30 to 60 percent), at the reduced operating cost level of $7 per train-kilometre, average cost per passenger-kilometre would decline to about 7.2¢. In order to achieve full

cost recovery under these conditions, average revenue per passenger-kilometre will have to be increased by about 20 percent from the current 6¢ - an increase which could, of course, only be achieved through fare increases. If load factors could not be improved to that extent, fare levels would have to be increased by an even greater margin in order to achieve cost recovery.

4.4 Modal Comparisons

As examined above, operating costs of regional rail services are very high, and even with substantial savings (of almost 50 percent) these services could not achieve cost recovery without substantial increases in passenger volume and/or fares. In contrast to the current rail costs of $13.50 per train-kilometre for a two-car RDC unit, intercity buses can be operated at $1.35 per vehicle-kilometre. For a typical 44-seat intercity bus, this translates to an average unit cost of 3¢ per seat-kilometre, and bus companies recover this cost from passenger revenues, which at existing bus fares in Atlantic Canada are, on average, 6¢ per passenger-kilometre.

Based on these unit cost estimates, bus service can provide the capacity that is currently provided by rail, for about $4 million a year (see Exhibit 4.6). This "substitution" scenario would schedule two bus departures for every rail departure currently offered. Assuming that all the existing regional rail services are operated with two-car RDC units (with seating capacity of 176), this level of bus to rail substitution would provide only about half of the existing capacity (i.e., 88 seats). However, in view of the current load factors which, on average, are 30 percent, such a reduction in capacity should not affect service levels. In fact, service frequency would increase, providing greater schedule flexibility. If the current ridership levels could be maintained under these conditions, bus services would operate at a reasonable load factor of 60 percent.

The potential savings from such a substitution scenario are clearly substantial since costs can be reduced from the current $21 million (or from $11 million under the improved rail scenario) to $4 million. At current fare levels, passenger revenues (i.e., VIA's current revenues from regional

Exhibit 4.6

Modal Substitution Scenarios

	Comparable[1] Service Cost ($ 000's)	Maximum[2] No. of departures	Comparable[3] Service Cost ($ 000's)	Maximum[4] No. of departures
Halifax-Yarmouth	700	9	1860	4-2
Halifax-Sydney	1330	13	2830	4-2
Halifax-St. John	820	16	3110	4-2
Moncton-Edmundston	410	NA	930	4-2
Moncton-Campbellton	690	8	1880	4-2
	3950		10610	

1 Substitution of two bus departures for every rail departure

2 Number of bus departures that can be provided at current rail costs

3 Substitution of two bus and one air departure for every rail departure (Halifax-St. John route includes 2 air departures: one to Moncton and one to St. John)

4 Number of bus-air departures that can be provided at current rail costs

services shown previously in Exhibit 4.3) will exceed the costs of bus operations by $0.5 million. Even if fares have to be reduced somewhat to compensate for reduction in quality of service (if indeed rail service is perceived to be superior to bus), there is still some margin to allow for full cost recovery. Current fares can be reduced by more than 10 percent and costs of bus services still recovered.

Instead of providing the minimum amount of bus service that would be necessary to substitute for the existing rail service, part of the savings from the discontinuation of rail service could be used to expand bus service. As shown in Exhibit 4.6, the existing level of expenditure on regional rail service can provide nine daily bus departures between Halifax and Yarmouth, 13 between Halifax and Sydney, 16 between Halifax and St. John, and 8 between Moncton and Campbellton. The expansion of bus service to such an extent, however, may not be a reasonable strategy. The service frequency would obviously be increased dramatically, which may in turn increase demand for intercity travel (or divert automobile travel to bus), but this increase in ridership is unlikely to improve the financial performance of the system much beyond that of the current rail service. However, a mixed strategy of increasing service frequency beyond the current level and realizing the remaining potential for cost savings could prove to be more reasonable. For example, the cost of providing four bus departures a day for every rail departure that currently operates would be about $8 million. Even if ridership does not increase at these higher service frequencies, with VIA's current revenue base of $4.5 million, the deficit would only be $3.5 million (compared with VIA's current deficit of $16.5 million).

Alternatively, regional passenger services in Atlantic Canada could be improved with a combination of bus and air services to substitute for the existing rail service. There is little data available on operating costs of regional air carriers, but some rough estimates can be obtained based on a recent Transport Canada study.[5] Using data submitted to the CTC by EPA

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5 Transport Canada, Maritime Provinces Intramodal Passenger Study: Review of Existing Intercity Passenger Transportation Services (Strategic Planning Group, 1983).

which reflect actual operating conditions and cost characteristics of the turboprop aircraft (HS-748) that the airline flies in Atlantic Canada, it is estimated that the cost of an air departure on most regional routes is about one-third of the cost of a typical train trip. On a seat-kilometre basis, the cost of regional air service is still higher than rail since this type of aircraft has a smaller seating capacity than the two-car RDC units. At load factors that are typical of each mode in the region (30 percent for rail and 50 percent for air), however, the passenger-kilometre cost estimates for air and rail are fairly similar.

Using these estimates for air travel, the costs of a combined bus-air substitution scenario, involving two bus departures on each of the five regional routes and one air departure between the terminals of each of the routes, are estimated at about $10.5 million. This is, of course, only about one-half the current rail costs and equivalent to the costs of the significantly improved rail scenario. If the full cost of current rail services is used to substitute bus and air services, four bus departures can be operated on each route, together with two daily air departures between their terminals. This scenario will not result in any cost savings, but in all likelihood will generate more revenue than the current rail services, thus recovering a greater portion of the $21 million in operating costs.

In summary, substitution scenarios offer scope for significant cost savings and/or service improvements. The minimum level of service comparable to current rail service will cost $4 million, resulting in annual savings of $17.0 million. A hybrid bus-air substitution scenario, offering service levels comparable to rail on each of the routes, and improved air services between the terminals of these routes, is estimated to cost $10.5, yielding net savings of about $10.5 million a year. With this hybrid scenario, however, the revenue base is likely to improve as well, reducing subsidy requirements even further. If the financial performance of rail cannot be improved to achieve a reasonable level of cost recovery, these substitution scenarios provide policy alternatives for future consideration.

5. Transcontinental Services

5.1 Introduction

Current transcontinental services consist of two alternate routes between Halifax and Montreal (the CN route through Campbellton and Riviere-du-Loup, and the CP route through St John and Sherbrooke) and two between Winnipeg and Vancouver (the CN route through Saskatoon and Edmonton, and the CP route through Regina and Calgary). On the central section, trains from Montreal and Toronto meet at Sudbury and operate together to Winnipeg through White River and Thunder Bay. Transcontinental services were consolidated in 1981 as part of the federal government's effort to restructure the national rail passenger system in order to to reduce deficits. However, services on the CP route between Halifax and Montreal (i.e., through St. John and Sherbrooke) and the CN route between Winnipeg and Vancouver (i.e., through Saskatoon and Edmonton) were reinstated in June, 1985.

Operating statistics are available up to 1984, when transcontinental services carried 1 million passengers (about 15 percent of the system total) travelling almost 1 billion passenger-kilometres (38 percent of the system total). In 1984, transcontinental services achieved a revenue-to-cost ratio of 25 percent (23 percent between Montreal and Vancouver; 30 percent between Montreal and Halifax), yielding an operating deficit of $187 million (almost 40 percent of VIA's total operating deficit). With the introduction of new services in 1985, the cost of transcontinental services must have increased significantly. In this short time span, it is unlikely that passenger revenue increased proportionately. Thus, transcontinental services probably accounted for more of VIA's operating deficit in 1985 than in 1984.

The following section describes transcontinental services in detail and provides background information on how service levels have changed in the last 15 years. Changes in the financial performance of transcontinental services are examined in the subsequent section. Finally, potential improvements in both service levels and financial performance are assessed.

5.2 Service Characteristics

Under VIA's summer schedule of 1985, the "Atlantic" train leaves Halifax at 12:30 and arrives at Moncton at 17:10. It then continues on the CP route through St. John and Sherbrooke arriving at Montreal 8:30 the next morning. The Ocean train leaves Moncton at 18:05, travels on the CN route through Campbellton, Mont-Joli, Riviere-du-Loup and Quebec (Ste.-Foy), arriving at Montreal at 8:45 the next morning. The eastbound Ocean departs from Montreal at 18:30 and arrives at Moncton 11:05 the next morning to connect with the Atlantic. The eastbound Atlantic, on the other hand, departs from Montreal later in the evening at 20:45, passes through Moncton the next afternoon at 14:05, and arrives at Halifax early in the evening, at 18:40.

The western transcontinental train leaves Montreal in the morning at 9:30 (with a short 45 to 60 minute connection time with trains arriving from Halifax) and reaches Sudbury at 19:50 in the evening. The connecting train from Toronto leaves at 12:55, arriving at Sudbury at the same time as the train from Montreal. Leaving Sudbury at 20:40, the transcontinental train arrives at Winnipeg the next evening at 19:20. The train following the southern CP route, i.e., the Canadian, leaves Winnipeg at 20:05 in the evening, reaches Regina at 2:25 in the morning, and Calgary at noon, arriving in Vancouver at 9:25 the next morning. The other transcontinental train that follows the northern CN route from Winnipeg (the Supercontinental), leaves shortly after the Canadian at 21:30, reaches Saskatoon at 6:30 the next morning and Edmonton that afternoon at 14:00, arriving at Vancouver the next afternoon at 13:10.

The eastbound Canadian departs from Vancouver at 14:00, reaches Calgary at 13:00 the next afternoon and Regina at 23:00 in the evening, arriving at Winnipeg at 7:40 the following morning. The eastbound Supercontinental leaves Vancouver at 12:45, reaches Edmonton the next day at 12:30 and Saskatoon that evening at 20:10, arriving at Winnipeg the following morning at 7:15. The eastbound train from Winnipeg leaves at 8:25 in the morning and reaches Sudbury at 8:50 the next morning. The

trains leaving Sudbury to Toronto and Montreal arrive at 16:40 and 19:45 respectively, the same day.

Between Halifax and Montreal, both Ocean and Atlantic have approximately the same scheduled travel time of 20 hours. The scheduled travel time between Montreal and Winnipeg is about 34 hours and between Toronto and Winnipeg, 30 hours and 30 minutes. Between Winnipeg and Vancouver, the Canadian following the southern route takes 37 hours and 20 minutes and the Supercontinental following the northern route takes about 41 hours. Total travel time between Montreal and Vancouver is about 72 hours through Calgary and 76 hours through Edmonton. The scheduled travel time for the eastbound trips is longer: 77 hours through Calgary and 78 hours through Edmonton.

As noted above, this service pattern came into effect in June, 1986. Between November 1981 and June 1985, the only transcontinental service followed the CN route between Halifax and Montreal through Campbellton and Riviere-du-Loup, the CN route between Montreal and Toronto, and the CP route all the way between Toronto and Vancouver through Sudbury, Winnipeg, Regina, and Calgary. Because of the detour through Toronto, the scheduled travel time was longer (86 hours and 30 minutes eastbound and 89 hours and 30 minutes westbound). Prior to service cutbacks in 1981, VIA operated basically the same service as today, with the exception that during the summer months, two alternate services operated through Ontario: the train from Montreal followed the CN route through Capreol to Winnipeg while the train from Toronto followed the CP route through Sudbury to Winnipeg. This dual structure through northern Ontario was the same service pattern that was in effect prior to VIA's establishment in 1979.[1]

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[1] VIA discontinued the transcontinental service through Capreol in October, 1979 but the next year reinstated (under political pressure) the service during the summer months.

Recent passenger statistics are not available for the expanded transcontinental services, but in 1984 the single service across the country carried one million passengers and one billion passenger-kilometres. The Halifax-Montreal route accounted for 46 percent of passengers and 31 percent of passenger-kilometres. Historical statistics are not available for this eastern route, but as shown in Exhibit 5.1, passenger volumes on the western transcontinental declined sharply after the service cutbacks in 1981. The number of passengers declined from 963,000 in 1980 to 462,000 in 1982, and passenger-kilometres from 1 billion to 600 million. There has, however, been some increase since 1982; the number of passengers has increased by almost 20 percent and passenger-kilometres by 10 percent. From the figures shown in Exhibit 5.1, it can also be observed that the service cutbacks in 1981 had a more adverse effect on shorter-haul travel. The average trip distance increased from 1,089 kilometres in 1980 to 1,299 kilometres in 1982. From the average trip distances, it can also be observed that the recovery in passenger volumes since 1982 has been in shorter-haul travel as the average trip distance declined by about 10 percent to 1,193 kilometres.

5.3 Financial Performance

The financial performance of transcontinental services in 1984 is documented in Exhibit 5.2. The total operating cost was $249 million and the total revenue, $62 million, yielding a deficit of $187 million. Although more recent data are not available, the cost of transcontinental services has obviously increased considerably since the alternate routes were reinstated in June, 1985. As noted earlier, the financial performance of these services must have deteriorated even further since it is unlikely that revenues increased proportionately immediately after the introduction of the new services. Transcontinental services accounted for more than one-third of VIA's total operating deficit in 1984, and in all likelihood, a considerably greater share in 1985.

The average cost-recovery ratio for transcontinental services in 1984 was 25 percent, but the Halifax-Montreal route performed considerably

Exhibit 5.1

Passenger Statistics for Transcontinental Services

	Passengers (000's)	Passenger-kilometres (millions)	Average Trip (km)
1980	963	1049	1089
1981	855	985	1152
1982	462	600	1299
1983	478	573	1199
1984	551	657	1193

Exhibit 5.2

Financial Performance of Transcontinental Services 1984

	Halifax-Montreal	Montreal-Vancouver	Total
VIA Cost ($ 000's)	26,324	93,671	119,995
Railway Charges ($ 000's)	32,285	96,309	128,594
Total Cost ($ 000's)	58,609	189,980	248,589
Passenger Revenue ($ 000's)	17,467	44,488	61,955
Deficit ($ 000's)	41,142	145,492	186,634
Revenue/cost (%)	30	23	25
Revenue/passenger ($)	37	81	61
Cost/passenger ($)	125	345	244
Deficit/passenger ($)	88	264	183
Revenue/pass-km (¢)	6.1	6.8	6.6
Cost/pass-km (¢)	20.4	29.1	26.4
Deficit/pass-km (¢)	14.3	22.3	19.8

better than the western transcontinental. In fact, with a 30 percent revenue-to-cost ratio, the Halifax-Montreal route achieved the highest cost recovery in the system after four corridor routes (Ottawa-Toronto, Montreal-Toronto, Toronto-Kingston, and Toronto-Windsor). The western transcontinental achieved a much lower cost-recovery ratio and, due to its length, naturally accounted for a much larger share of the total deficit incurred by transcontinental services. Given the long trip distances on this route, the deficit per passenger on the western transcontinental was also high ($244), but the average deficit per passenger-kilometre (22¢) was the same as the average for regional services in Atlantic Canada. The Halifax-Montreal route on the other hand, achieved the third lowest deficit per passenger-kilometre (14.3¢) in the entire national system after Toronto-Montreal and Ottawa-Toronto routes. The revenue per passenger-kilometre was higher on the western transcontinental (6.8¢) than the Halifax-Montreal route (6.1¢). The average of 6.6¢ per passenger-kilometre was higher than the average revenue generated by regional services in Atlantic Canada but lower than in the corridor.

On a per passenger-kilometre basis, the average cost of transcontinental services was in the same range as regional services in Atlantic Canada and most corridor services. (Due to the much lower costs of Ottawa-Toronto and Montreal-Toronto routes, however, the overall corridor average was considerably lower.) The most notable difference in the cost of transcontinental services is the high share of VIA's own costs over railway charges. While VIA's own costs account for 30 percent of regional service costs and 36 percent of corridor costs, in the case of transcontinental services, they account for almost 50 percent of the total. In fact almost one-half of all of VIA's own costs are associated with transcontinental services. As noted, there are no data on how VIA costs are broken down, but onboard service requirements on transcontinental services clearly contribute to high costs. Particularly on the western transcontinental, a cost of $170 per passenger is excessive, and indicative of significant inefficiencies.

It is interesting to compare the cost structure of transcontinental services in 1984 to the earlier period when VIA first took over the rail passenger system from the railways and was providing service on both transcontinental routes. In 1980, the cost of transcontinental services was $220 million, of which railway charges represented $130 million and VIA's own costs $90 million. In spite of an almost 50 percent reduction in service, by 1984, VIA's own costs had increased by $30 million (about the same level of expenditure in constant dollars), while the railway charges remained at about the same level as in 1980 (a one-third reduction in constant dollars). On a per-passenger basis, it is estimated that VIA's own costs increased by almost $100 (from about $70 per passenger in 1980 to $170 per passenger in 1984).

A recent study of the western transcontinental service indicates that the total cost of transcontinental service between 1981 and 1982 actually increased by about $5 million, while revenues declined by $15 million.[2] As a result, the revenue-to-cost ratio declined from 31 percent to 23 percent. The service cutbacks, therefore, worsened the financial performance of transcontinental service and did little to reduce VIA's operating costs.[3]

Although the cost structure of transcontinental services requires a more detailed examination, there are no data to carry the analysis any further. It is clear that VIA's own overhead and onboard service costs have increased significantly; however, they cannot be broken down to examine the corporation's expenditures in any more detail. Railway charges were broken down and examined in more detail for corridor and regional services based on how these charges were distributed in 1980, but the same type of

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2 Although the service level declined much more drastically between 1981 and 1982, due to significant fare increases (from 6¢ per passenger-kilometre in 1980 to 7.6¢ in 1982), passenger revenues did not decline as much. Mark Bunting and Everett Johnson, Western Transcontinental Railway Passenger Service: Market Opportunities and Requirements for Modernization (Alberta Economic Development, 1984).

3 Although railway charges declined, VIA's own costs actually increased to more than offset the savings.

analysis cannot be carried out for transcontinental services. Unlike the railway charges associated with the corridor and regional services, which are all operated by CN, costs of transcontinental service consist of both CN and CP charges. Distribution of the charges and the composition of the services provided by each railway differed substantially from 1980 to 1984. Between Halifax and Montreal, trains operated exclusively on the CN track in 1984, while in 1980, CP was involved in the operation of one of the two routes. Between Montreal and Vancouver, on the other hand, CN was involved in the Montreal-Toronto section only, while in 1980, it operated the entire northern route through Capreol, Winnipeg, Saskatoon and Edmonton.

Another factor which makes the analysis of 1984 railway charges difficult is the lack of statistics on train- and car-kilometres (which are, of course, necessary to derive the unit charges that were the basis for the analysis of corridor and regional service costs in the previous chapters). In conclusion, however, it can be said that the cost of transcontinental service has increased substantially since VIA's establishment. The prospects for improvement are discussed in more general terms in the next section.

5.4 Potential Improvements

The unique aspect of transcontinental rail service is that, unlike the corridor and regional services discussed previously, it does not necessarily respond to a particular transportation need that can be met by any other means (e.g., bus or air transport). Transcontinental service accommodates long haul and mainly recreational travel. Thus, it caters to the tourist market rather than to intercity transportation. There are at the same time, social and political reasons for its existence, and it is unlikely that it would ever be discontinued for financial reasons. Policy concerns with respect to transcontinental rail service, therefore, should focus on improving its financial performance (through both cost reductions and revenue increases), rather than suitable substitution options. The critical issues with respect to cost reduction are more efficient management on VIA's part, and greater leverage in negotiating with the railways for reduced charges. The revenue

prospects, on the other hand, depend in large part on VIA's ability to exploit the tourism potential of transcontinental travel opportunities.

A recent study of the western transcontinental reached the conclusion that if its service levels are not improved, ridership will gradually decline, and within the existing operational structure and costing arrangements, operating deficits will continue to escalate.[4] The study also explored market opportunities, determined modernization requirements, and assessed the viability of two alternative service improvement scenarios. Both these scenarios involved the acquisition of new bi-level equipment (Superliner or UTDC-CanCar), which could provide greater capacity to accommodate traffic increases without the corresponding increase in train-related costs. One of the service scenarios was based on the concept of improving the level and reliability of service within the existing institutional framework. Under these conditions, traffic was projected to increase by 30 percent by the mid-1990s. The alternative scenario called for fundamental changes in operating conditions and a new approach to railway contracting.

The costing of alternative service scenarios was based on a model which estimated train consists, output units, and equipment requirements. Estimates of annual operating costs were then based on unit cost estimates, and equipment capital costs were determined and converted to equivalent annual costs. Both scenarios involved reduction in equipment maintenance costs from the current levels, while the scenario calling for a new basis for railway contracting also involved reduction in train crew costs (from the current costs of about $3.00 per train-kilometre to $1.45 per train-kilometre). Onboard service and other train staff costs were reduced in both cases, but the scenario calling for a new organization also involved the contracting out of dining services to private caterers. The differences between the unit operating costs of the two scenarios were not, however, very significant. In total, the "limited change" scenario had a cost estimate of $13.95 per train-kilometre on CP trains and $16.37 on CN trains while the "major change" scenario had unit costs of $13.36 and $15.12 per train-

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[4] Ibid

kilometre on CP and CN trains respectively (the off-peak kilometre costs were somewhat lower than these).

According to this study's projections, the "limited change" scenario would generate annual revenues of $116 million and the "major change" scenario $174 million (both scenarios involve service on both transcontinental routes). In both cases, however, unit revenues of about 6.2¢ to 6.4¢ per passenger-kilometre are not expected to increase at all from the current levels. The annual operating costs of the two scenarios were estimated at $266 million for the "limited change" scenario and $304 million for the "major change" scenario. Both involve, however, purchase of new equipment, the annualized capital costs of which bring the total costs to $315 million and $364 million respectively. The unit operating costs derived from these estimates are 17¢ and 13¢ per passenger-kilometre respectively which represent a significant improvement over the current costs of about 22¢ per passenger-kilometre.

In spite of this major improvement, the study may well be underestimating the potential for both cost savings and revenue increases. As noted above, although the study assumes that the unit railway costs will decline for equipment maintenance and train crews, there may well be scope for further savings in both these as well as in other cost categories, particularly in the overhead structure that is built into the current railway charges.

Although both scenarios considered in the study project large increases in passenger-kilometres, actual train-kilometres necessary to accommodate this traffic do not appear to be much greater than the actual train-kilometres operated prior to the service cuts in 1981. In 1980, the railway charges associated with transcontinental services were $90 million, and if this amount was to be escalated at a rate equal to the actual increase in railway charges per car-kilometre for the entire system, railway charges by 1984 would have been about $120 million. Built into this, of course, are the inefficiencies associated with crewing arrangements, equipment

maintenance, and overheads. If productivity improvements in all these areas were offset for the increase in train operations required by the improved scenarios, the railway charges associated with these scenarios could be limited to about $120 million. VIA's own costs associated with the western transcontinental in 1984 were about $94 million. It is not unreasonable to expect that the same level of expenditure could accommodate the requirements of expanded transcontinental services envisaged under the improved scenarios. According to these very rough estimates, therefore, it is conceivable that the "major change" scenario could be operated for about $210 million (compared with the $304 estimated by Bunting and Johnson). Together with the annualized equipment costs of $60 million, the total cost of the scenario would be $270 million.

Based on the revenue estimates of $175 million noted above, the "major change" scenario would then achieve a cost-recovery ratio of 65 percent, rather than the estimated 48 percent by the study itself. It was also noted above that the study calls for major increases in ridership, but little increase in fares. If revenues could further be increased by 25 percent to $220 million through fare increases reflecting major service quality improvements, the cost-recovery ratio would actually become 80 percent.

It must again be emphasized that these are rough estimates. Nevertheless, they point to further improvements in the financial performance of transcontinental services that can be achieved through efficiency improvements resulting in cost savings and service improvements resulting in ridership and revenue increases.

In conclusion, therefore, the type of service improvements envisaged by Bunting and Johnson combined with a more aggressive strategy to reduce costs could potentially reduce the losses incurred in the provision of transcontinental service to about $50 million (and perhaps even closer to full cost recovery). Associated with this type of a scenario, of course, are the indirect benefits that Bunting and Johnson identify in their own study (i.e., increased economic activity through the manufacture of new rolling stock as well as tourism and related activities).

Chapter 6

Remote and Other Regional Services

6.1 Introduction

Rail passenger services in Canada were examined in the previous chapters under three categories: Quebec-Windsor corridor, Atlantic-Canada, and transcontinental services. In this chapter, the remaining remote and regional services are examined. These services fall into four groups which are discussed in more detail in the subsequent sections:

- Northern Quebec: from Montreal to Chicoutimi and Cochrane through Parent and Senneterre
- Northern Ontario: from Toronto to Kapuskasing and from Sudbury to Winnipeg through Capreol and Sioux Lookout
- Northern Manitoba: from Winnipeg to Churchill through Hudson Bay, The Pas, Lynn Lake and Thompson
- Other remote and regional: from Gaspe, Quebec to Matapedia, New Brunswick, and from Victoria to Courtenay, British Columbia, and from Edmonton, Alberta to Prince Rupert, British Columbia.

Relevant data for these routes are summarized in Exhibit 6.1.

Between 1981 and 1985, VIA's route network included a number of other regional services. With reinstitution of the Supercontinental in June, 1985, services perviously classified as remote (Ottawa-Sudbury. Winnipeg-Saskatoon, and Saskatoon-Edmonton) are now part of the transcontinental route. Other regional services like Edmonton-Calgary have since been discontinued.

The remote and regional services examined in this chapter accounted in 1984 for about six percent of VIA's total passengers and seven percent of passenger-kilometres. Although the average revenue generated by these services is comparable to the system-wide average, the costs are much higher. In 1984, the average cost-recovery ratio for these services was only half of the system-wide average of 26 percent, and on certain routes, as low

Exhibit 6.1

Financial Performance of Remote and Other Services, 1984

Route	Passengers	Pass-km (000's)	Cost ($ 000)	Revenue ($ 000)	Deficit ($ 000)	Cost/ pass-km ($)	Revenue/ pass-km ($)	Deficit/ pass-km ($)	Deficit pass ($)	Rev/ Cost (%)
Montreal-Cochrane	39,873	10,688	8,973	840	8,133	0.84	0.08	0.76	204	9.4
Montreal-Chicoutimi	22,030	6,672	4,790	409	4,381	0.72	0.06	0.66	199	8.5
Total	61,903	17,360	13,763	1,249	12,514	0.79	0.07	0.72	202	9.1
Toronto-Kapuskasing	65,234	20,170	14,634	1,725	12,909	0.72	0.09	0.64	199	11.8
Winnipeg-Capreol	34,418	13,035	10,280	889	9,391	0.79	0.07	0.72	273	8.6
Winnipeg-Farlane	10,520	1,717	876	120	756	0.51	0.07	0.44	72	13.7
Hearst-Nakina	384	56	822	6	816	14.68	0.11	14.57	2,125	0.7
Thunderbay-Sioux Lookout	1,785	192	1,024	14	1,010	5.33	0.07	0.80	254	7.9
Total	47,107	15,000	13,002	1,029	11,973	0.87	0.07	0.80	254	7.9
Winnipeg-Churchill	45,501	20,510	18,862	1,457	17,405	0.92	0.07	0.85	383	7.7
Wabowden-Churchill	1,154	115	340	6	334	2.96	0.05	2.91	289	1.8
Lynn Lake - The Pas	9,616	1,501	1,235	104	1,131	0.82	0.07	0.75	118	8.4
Total	56,271	22,126	20,437	1,567	18,870	0.92	0.07	0.85	335	7.7

Exhibit 6.1 (cont'd)

Route	Passengers	Pass-km (000's)	Cost ($ 000)	Revenue ($ 000)	Deficit ($ 000)	Cost/ pass-km ($)	Revenue/ pass-km ($)	Deficit/ pass-km ($)	Deficit pass ($)	Rev/ Cost (%)
Edmonton-Prince Rupert	14,576	10,841	5,436	641	4,795	0.50	0.06	0.44	329	11.8
Winnipeg-Prince Rupert	78,369	68,970	21,034	4,098	16,936	0.30	0.06	0.24	216	19.5
Total	92,945	79,811	26,470	4,739	21,731	0.33	0.06	0.27	233	17.9
Gaspe-Montreal	126,088	73,483	24,605	4,927	19,678	0.33	0.07	0.26	156	20.0
Victoria-Courtenay	41,183	5,990	1,711	333	1,378	0.29	0.06	0.23	33	19.5
Sudbury-Whiteriver	2,377	300	286	14	272	0.95	0.05	0.90	114	4.9

as one to two percent. As a result, these services accounted for about 20 percent of the total operating deficit incurred in 1984. The average deficit was $225 per passenger or 50¢ per passenger-kilometre. As discussed below, however, in spite of this poor financial performance, the justification for subsidies associated with these services is much stronger than for any other part of the rail passenger system. On most of these routes, transportation options are limited and communities along these routes depend on rail service; thus, there is a definite "public need" for most of these services.

6.2 Northern Quebec

There is an overnight train which leaves Montreal in the evening (18:30 on Mondays and Wednesdays and 20:00 on Friday) arriving at Senneterre the next morning (8:30 on Tuesdays and Thursdays and 10:00 on Saturdays). In the opposite direction, the train leaves Senneterre in the afternoon on Sundays (17:20) and later in the evening on Tuesdays and Thursdays (22:15). This 703-kilometre route takes 12 hours by the overnight train. It passes through Harvey and Parent, and makes some 60 stops serving many small communities along the way.

The 296-kilometre section between Senneterre and Cochrane is operated by standard coach-trains, which take 5 hours and 25 minutes to travel, serving some 12 small communities on the route. Passengers from Montreal travelling to points beyond Senneterre have to transfer from the overnight sleeper-train to the regular coach-train, which involves a connecting time of 35-40 minutes at Senneterre.

In 1984, VIA carried almost 40,000 passengers on the Montreal-Cochrane route. Although the entire route is almost 1,000 kilometres, the average trip distance was 268 kilometres, yielding a total of about 10 million passenger-kilometres of travel on this route. The average revenue of 8¢ per passenger-kilometre was 15 percent higher than VIA's system-wide average. The average cost of 84¢ per passenger-kilometre, on the other hand, was more than three times the system-wide average. This poor cost-performance was due to load factors and to the high costs associated with

the provision of sleeper service. The resulting operating deficit on the Montreal-Cochrane route was 76¢ per passenger-kilometre and $204 per passenger. The cost-recovery ratio was only 9.4 percent.

The other VIA service in northern Quebec is between Montreal and Chicoutimi, again through Harvey. This service operates three times a week leaving Montreal in the afternoon (14:15), arriving at Chicoutimi late in the evening (23:40). In the opposite direction, trains leave Chicoutimi Tuesday and Thursday mornings (10:35) and Sunday afternoon (13:00). In addition to making six stops between Montreal and Harvey, this service stops at some 32 locations between Harvey and Chicoutimi. The route is 520 kilometres in length and the scheduled travel-time is 9 hours and 25 minutes.

In 1984, the Montreal-Chicoutimi service carried 22,000 passengers. The average trip length was some 300 kilometres, yielding a total of 6.7 million passenger-kilometres of travel on this route. The average revenue of 6¢ per passenger-kilometre was about the same as VIA's system average, but although there was no sleeper service involved, the average cost of 72¢ per passenger-kilometre was still very high. The average deficit of $199 per passenger (or 66¢ per passenger-kilometre) was almost as high as the much longer and remote Montreal-Cochrane route. The cost-recovery ratio was only 8.5 percent.

There are no bus services that directly correspond to rail routes in northern Quebec. The rail route between Montreal and Harvey roughly corresponds to the bus service Voyageur provides through Louisville and Shawinigan (en route to Roberval). The rail route to Cochrane goes north to La Tuque (which is also served by Voyageur en route to Roberval), and from there follows a northwesterly route to Senneterre. This section between La Tuque and Senneterre through Parent is indeed remote because it is not accessible by major highways. Bus service to northwestern Quebec is provided by Voyageur along Highway 117 to Val-d'Or and Rouyn, and from there along Highway 109 to Matagami, and along Highway 113 to Chibougamau. Passengers travelling from Montreal to Senneterre must take

the bus to Val-d'Or and transfer to the Chibougamau bus (Senneterre is about 80 kilometres from Val-d'Or).

The rail route from Harvey to Chicoutimi also does not follow a highway alignment. Although the locations served by rail along this route may still have to be considered remote, the distances involved are not very long. Chicoutimi is served by Voyageur from Quebec City along Highway 175. Passengers from Montreal have to transfer at Quebec City.

In summary, VIA provides service to many remote communities in northern Quebec that do not receive bus service (or do not have major road access). With very few exceptions (eg. Val-d'Or), these northern Quebec communities do not receive regular air service. Thus, there may be a strong case for the continuation of these remote rail services based on "public need" criteria. However, as in all parts of the rail-passenger system, there may be significant opportunities for improving the financial performance of these services through reduced operating costs, even though there may be little scope for increasing either ridership or fares.

6.3 Northern Ontario

VIA provides overnight service between Toronto and Kapuskasing. This service operates every day of the week and provides sleeping accommodation. The northbound trains leave Toronto at 21:25 and arrive at 11:45, the southbound trains leave at 17:40 and arrive at 8:10. The 841-kilometre route between Toronto and Kapuskasing passes through North Bay, Timmins and Cochrane. On the 784-kilometre section between Toronto and Timmins, Ontario Northland Railway also operates daily service (except for Saturdays). The ONR regular coach-trains leave Toronto at 12:30 and arrive at Timmins at 23:30, and in the opposite direction, leave Timmins at 7:20 and arrive in Toronto at 18:20.

In 1984, the Toronto-Kapuskasing service carried 65,000 passengers, travelling a total of 20 million passenger-kilometres. The average trip length was 309 kilometres, suggesting a considerable amount of

intermediate travel on this route. The average revenue of 8.6¢ per passenger-kilometre was, like most other remote services, above VIA's system average. The average cost of 72¢ per passenger-kilometre was also high, reflecting low load-factors as well as high costs of providing sleeper service. The average deficit was $199 per passenger, or 64¢ per passenger-kilometre. The cost-recovery ratio of 11.8 percent was an improvement over remote services in northern Quebec, but still considerably lower than the rest of the system.

Between Toronto and North Bay, Gray Coach operates eight bus departures a day, four of which continue to Timmins. The scheduled travel times on express buses are 4 hours and 30 minutes to North Bay and 10 hours and 15 minutes to Timmins. Between North Bay and Kapuskasing, Ontario Northland Transportation Commission provides twice-daily service through Timmins and Cochrane. Scheduled travel-time between North Bay and Kapuskasing is eight to nine and a half hours.

Air service between Toronto and Kapuskasing is provided by Austin airways two or three times a day by Hawker-Siddeley-748's. These flights also stop at Timmins. Air Canada also operates on this route serving both Timmins and Kapuskasing with three flights a day (with DC-9's or Boeing 727's). North Bay also receives frequent air service from Toronto. Air Canada operates three daily flights (using DC-9's or Boeing 727's); Austin Airways (with Beachcraft) and Air Ontario (with Convairs) each operate one flight a day.

The other major remote VIA service in northern Ontario is from Capreol (a few miles north of Sudbury) to Winnipeg, via Sioux Lookout. This service follows a remote route through Hornepayne, Armstrong, and Minake, making some 40 stops along the route, and operates three days a week with sleeping accommodation. The route is 1,498 kilometres and takes almost 24 hours. There is an additional train that operates between Sioux Lookout and Winnipeg (once a week). Feeding into this route, there are also services operating from Thunder Bay to Sioux Lookout and from Hearst to

Nakina. The former service operates twice a week on a 307-kilometre route which takes five hours. The Hearst-Nakina route is 232 kilometres, takes 5 hours and 30 minutes, and operates three days a week.

In 1984, the Capreol-Winnipeg service carried some 34,000 passengers, travelling a total of 13 million passenger-kilometres. The additional service provided that year between Winnipeg and Farlane carried another 10,000 passengers, travelling 1.7 million passenger-kilometres. The average trip length on the Capreol-Winnipeg route was only 378 kilometres, compared with the total route distance of 1,498 kilometres. On the Winnipeg-Farlane section, the average trip length was 163 kilometres.

Average revenue on the route was about 7¢ per passenger-kilometre. Average cost on the Capreol-Winnipeg service of 79¢ per passenger-kilometre was in line with other remote sleeper services, while the cost of the regular coach service between Winnipeg and Farlane of 51¢ per passenger-kilometre was less. Average deficits were $273 per passenger (or 72¢ per passenger-kilometre) between Winnipeg and Capreol, and $72 per passenger (or 44¢ per passenger-kilometre) between Winnipeg and Farlane. The respective cost-recovery ratios were 8.6 percent and 13.7 percent.

The financial performance of these services is clearly not good, but is in line with that of remote services in other parts of the country. Although the operating deficit exceeds $10 million a year, in view of the remoteness of the route serving communities with no major road access, there is justification for continued subsidies based on "public need" criteria. Despite poorer financial performance, the magnitude of the subsidy involved is not excessive compared with the subsidies that go into most of the Quebec-Windsor corridor (e.g., $16 million dollars for Montreal-Quebec, $11 million for Montreal-Ottawa, and $60 million between Toronto and Montreal).

The justification for the two feeder services, Hearst-Nakina and Thunder Bay-Sioux Lookout, is not as strong. In 1984, only 384 passengers travelled between Hearst and Nakina, at a cost of almost $15 per passenger-

kilometre, and a deficit of $2,125 per passenger. Although Nakina is a remote community, Hearst is on Highway 11 and receives regular bus service from Kapuskasing in the east by Ontario Northland Transportation Commission and from Nipigon in the west by Gray Goose. There are more passengers travelling between Thunder Bay and Sioux Lookout (1,785 passengers in 1984); nevertheless, the operating cost of over $5 per passenger-kilometre is still excessive and yields a deficit of $566 per passenger. There are more remote communities along this route, but the magnitude of the subsidy still raises questions about justification of continued subsidy. Compared with the magnitude of subsidies that go into other services across the country where there is hardly any need for rail passenger service, it is difficult to give high priority to the savings that would accrue from the discontinuation of these services which are relatively small ($1.8 million).

In summary, there are regular and fairly frequent bus services on the Toronto-Kapuskasing route. In view of these alternate transportation services, the need for rail passenger service does not appear pressing. In any event, Ontario Northland Railway operates daily service on a large part of this route, between Toronto and Timmins. The subsidies are very large, and it is highly unlikely that any improvement could bring this service close to full cost-recovery. The potential savings from discontinuing this service are $13 million a year. Even if some type of rail service must be retained, it does not appear that overnight sleeper service is the most appropriate way of serving this route. The average trip length is only about 300 kilometres, suggesting that most travel on this route is intermediate. Thus, the route would be most efficiently served by either RDC's or conventional coach-trains.

The "public need" argument is much stronger for the Capreol-Winnipeg route. This service is truly remote serving communities that are without either bus or regular air service. The need for the two extensions of this route to Hearst (from Nakina) and to Thunder Bay (from Sioux Lookout) is questionable, particularly in the case of the former.

6.4 Northern Manitoba

Winnipeg-Churchill is the longest remote VIA service. This 1,697-kilometre route passes through Dauphin, Hudson Bay (Saskatchewan), The Pas, Wekusko, Thompson and Gillam. It operates three times a week, leaving Winnipeg in the evening (20:20), arriving at The Pas the next morning (8:45), and reaching Churchill the following morning (7:30). Sleeping accommodation is provided on this 35-hour trip. A connecting service is provided to Lynn Lake, which is 389 kilometres north of The Pas. An additional service is provided on Sundays on the 700-kilometre northern section of the route between Wabowden and Churchill.

In 1984, the Winnipeg-Churchill service carried 45,000 passengers, at an average trip length of 450 kilometres, travelling a total of more than 20 million-passenger kilometres. Together with the Wabowden-Churchill and Lynn Lake-The Pas services, VIA carried a total of some 56,000 passengers in northern Manitoba. Since trip distances on the latter two routes were much shorter (100 kilometres and 150 kilometres respectively), they accounted for only 1.6 million passenger-kilometres.

At more than $20 million a year, remote services in northern Manitoba are clearly expensive to operate. On a per-passenger-kilometre basis, however, the operating cost of the Winnipeg-Churchill service (92¢ per passenger-kilometre) is not significantly higher than other long remote services (e.g., Montreal-Cochrane and Winnipeg-Capreol). The unit cost of the Lynn Lake-The Pas service is also in the same range as other remote services, even though it does not involve sleeping accommodation which is expensive to provide. Although the additional Wabowden-Churchill service is much less expensive than the extensions of the Capreol-Winnipeg route (i.e., Hearst-Nakina and Thunder Bay-Sioux Lookout), unit costs are still unreasonably high.

The unit revenues generated by the northern Manitoba remote services (about 7¢ per passenger-kilometre) are in line with other remote services, and above VIA's system average. With the exception of the two extremely

costly services in northern Ontario, the deficit per passenger on northern Manitoba routes ($335 per passenger) is the highest in the country. This is partly because the average trip length on the Winnipeg-Churchill route is higher than the other three long remote routes (i.e., Montreal-Cochrane, Toronto-Kapuskasing, and Capreol-Winnipeg), but even the per-passenger-kilometre deficit of 85¢ is higher than the norm for other remote services.

As with the Montreal-Cochrane and Capreol-Winnipeg services, the Winnipeg-Churchill route also serves a number of very remote communities. The southern portion of the route between Winnipeg and Dauphin receives fairly frequent service from Gray Goose bus lines. Two of the five daily services to Dauphin continue north tc Flinn-Flon along Highway 10, serving The Pas. Another bus service also passes through The Pas to Thompson along Highway 391. Gray Goose provides two additional daily departures from Winnipeg to Thompson along Highway 6 through Grand Rapids. One of these services continues to Lynn Lake along Highway 391, and also provides a connection with another departure from Thompson to Gillam (less than 300 kilometres south of Churchill). On the fastest express service, the scheduled bus travel times from Winnipeg are 9 hours to The Pas and 10 hours to Thompson. From Thompson, scheduled travel times are 6 hours and 30 minutes to Lynn Lake and 4 hours and 45 minutes to Gillam. Scheduled travel-times by rail from Winnipeg to these cities are longer: 12 hours and 30 minutes to The Pas, 19 hours and 30 minutes to Thompson, 24 hours to Lynn Lake (i.e., with the connection at The Pas), and 26 hours to Gillam.

Air service to northern Manitoba is provided by Pacific Western airlines, operating three daily flights to Thompson, two of which make a stop at The Pas. Two of the Winnipeg-Thompson flights also continue to Lynn Lake. Pacific Western provides four flights a week from Winnipeg to Churchill that also stop at Gillam.

Although northern Manitoba is served by bus (with the exception of communities to the north of Gillam to Churchill) and some of the larger centres in the region receive fairly good air service, the case for retaining

rail service is probably still fairly strong. The rail route to Thompson does not follow any of the major highway routes and thus serves communities that do not receive regular bus service. On the section to the north of Thompson with one departure a day only as far as Gillam, the level of bus service is probably inadequate. As mentioned earlier in the case of other remote services, however, typical travel distances may not be long enough to justify the continuation of sleeping accommodation, which is clearly an additional expense. Although the average trip length of 450 kilometres on the Winnipeg-Churchill route is somewhat longer than other remote routes considered above, it is probably not in a range that could justify sleeper-service. The substitution of RDC's or conventional coach-trains (or the rail-bus concept that is currently under demonstration on this route) is likely to result in significant cost savings.

6.5 Other Services

Edmonton-Prince Rupert

VIA operates an overnight train with sleeper cars between Edmonton and Prince Rupert through Jasper, Prince George and Smithers. This service is provided three times a week, trains leaving Edmonton at 15:00 and arriving at Prince Rupert the following evening at 18:45. The eastbound trains leave Prince Rupert at 7:45 and arrive at Edmonton shortly at 12:30 the following day. The route is 1,540 kilometres and the scheduled travel-time is 28 to 29 hours.

In 1984, VIA extended this service from Edmonton to Winnipeg (the section which is now part of the Supercontinental). Thus, it is difficult to examine the passenger and financial statistics for the Edmonton-Prince Rupert section only, for the entire year of 1984. The difficulty in examining the performance of the route before and after the month of June is the seasonal variation in demand, which, like the other western transcontinental routes, is very pronounced. Nevertheless, some measure of overall performance can be obtained from the available statistics.

In 1984, the service that operated between Edmonton and Prince Rupert until the end of June carried approximately 15,000 passengers, travelling an average of 740 kilometres per trip, for a total of 11 million passenger-kilometres. The average cost of 50¢ per passenger-kilometre was lower than other remote services, probably due to much higher load-factors. The average revenue of 6¢ per passenger-kilometre was lower than other remote services and also below VIA's system average. The operating deficit on a per-passenger-kilometre basis was lower than other remote services, but higher on a per-passenger basis ($329 due to much longer travel distances). The cost-recovery ratio was 11.8 percent, equivalent to the Toronto-Kapuskasing route, but an improvement over other remote services across the country. With the extension of service to Winnipeg, the performance of this route became more in line with the western transcontinental than with the remote services. Although the overall cost-recovery ratio was somewhat below the 23 percent for the western transcontinental, the average cost of 30¢ per passenger-kilometre was equivalent to the western transcontinental.

There is no direct bus service between Edmonton and Prince Rupert, but Greyhound provides service from Edmonton to Tatejaune Junction (the junction of Highway 16 and Highway 5 near the Alberta-British Columbia border) where passengers can transfer to Coachways service to Prince Rupert through Prince George and Smithers. This bus service operates twice a day (one evening and one day-time service) and follows basically the same rail route. Thus, this is not a typically remote route where the continuation of rail service could be justified on the basis of "public need". The future of this service should be assessed more as an extension of transcontinental service, rather than a service meeting the needs of remote communities.

Gaspe-Matapedia

The rail service between Gaspe and Matapedia is an extension of the Ocean train that operates daily between Halifax and Montreal on the CN route through Moncton, Campbellton and Quebec City. The daily train with

sleeper cars leaves Gaspe at 15:25 and connects with the Montreal-bound Ocean at Matapedia at 22:15. The Halifax-bound train arrives at Matapedia early in the morning (4:45), and the train leaving there shortly thereafter arrives at Gaspe at 11:30. The route between Gaspe and Matapedia is 325 kilometres and follows the southern coast of the Gaspe Peninsula through Chandler, Port Daniel, New Carlisle and New Richmond. The train stops at 17 intermediate communities along this route.

The financial performance of the Gaspe-Matapedia service cannot be assessed based on available data, since VIA designates this route as Gaspe-Montreal, which includes a significant portion of the Ocean's operating costs. In 1984, the operating cost allocated for the Gaspe-Montreal service was about $25 million (compared with $59 million allocated for the entire Halifax-Montreal route). The costs associated with the Gaspe-Matapedia section were probably in the range of $8-$9 million (based on an average cost of about $20 per train-kilometre over this 325-kilometre section), with the remaining $15-$16 million being directly associated with the operations of the Ocean.

Intercity bus service to the Gaspe Peninsula is provided by Voyageur. On the south shore (i.e., along the same route as the rail line), twice-daily service is provided between Matapedia and Perce, which is some 60 kilometres south of Gaspe. Direct service to Gaspe, operating twice a day, is provided along the north shore from Mont-Joli, Riviere-du-Loup, Quebec City and Montreal. The scheduled travel-time between Montreal and Gaspe is 14 hours, somewhat shorter than the 17 hours that it takes by rail through Matapedia.

In view of the existing bus service, as well as the potential for improving that service, the cost of rail service between Gaspe and Matapedia is difficult to justify. Based on the same assumptions used in examining bus substitution options on regional routes in Atlantic Canada in Chapter 4, the costs of two round trips between Gaspe and Matapedia would be about $650,000 a year (or $1.3 million for four daily departures). The

potential for savings through substitution of comparable bus service is, therefore, in the range of $7-$8 million per year. Comparable bus service could easily meet the local demand on the south shore of the Gaspe Peninsula, and also provide a comfortable connection at Matapedia for passengers travelling on the overnight train to or from Montreal and Halifax.

Victoria-Courtenay

The rail route on Vancouver Island between Victoria and Courtenay is 224 kilometres and takes 4 hours and 30 minutes to travel. Daily trains leave Victoria at 8:15 and arrive in Courtenay at 12:45, departing for the return trip at 13:15 and arriving in Victoria at 17:40. The route serves Nanaimo as well as 25 other small communities along the way.

In 1984, this route carried some 41,000 passengers, travelling an average 145 kilometres per trip for a total of almost 6 million passenger-kilometres. The average cost of 29¢ per passenger-kilometre represented a slight increase over RDC services operating in Atlantic Canada, but the average revenue of 6¢ per passenger-kilometre was comparable. In 1984, the average deficit per passenger on the Victoria-Courtenay route was $33, and the cost-recovery ratio about 20 percent. There is no air service between Victoria and Courtenay, but Vancouver Island Coach Lines provides four departures a day in each direction. The scheduled bus travel time is similar to rail. The rationale to guide the future of rail service on Vancouver Island should be the same as that of Atlantic Canada. If operating costs can be reduced substantially and/or revenues increased to improve financial performance, the continuation of rail service could be justified; otherwise, bus service provides a greater cost-effective alternative.

7. Implications of the Proposed Rail Passenger Legislation

7.1 Introduction

Subsidies for rail passenger services constitute a significant financial burden on the federal government of Canada, allegedly due to a wide variety of public interest objectives being served by continuation of these uneconomic intercity passenger transportation services. However, per passenger or per passenger-kilometre, except for certain subsidies for ferry services in Atlantic Canada and British Columbia, subsidies to VIA Rail exceed by an order of magnitude, subsidies for other modes of transportation. These modes also provide public interest benefits that are often at least as significant as the benefits of rail passenger service.

Confronted with an apparently high level of public support for continuation of subsidized rail passenger services, at least in certain regions of the country, recently introduced new passenger legislation proposes to simultaneously improve certain services while reducing the financial burden on the federal government. The basic principles of this legislation involve eliminating subsidies for services in highly competitive markets such as the Quebec-Windsor Corridor and improving the financial performance in transcontinental and regional services. Specifically, the proposed legislation calls for cost recovery of 100%, 60%, and 40% in the case of corridor, transcontinental, and regional services respectively. Through the application of these principles, the federal government proposes to reduce total estimated subsidies to VIA Rail from $600 million in 1986 to approximately $400 million by 1989.

The primary objective of this study has been to develop an approach that can be used to quantify measures of public need as a basis for subsequent policy development. In the following sections, therefore, some preliminary findings related to the question of need are presented, followed by an indication of what these needs imply for continued federal government rail passenger subsidies.

7.2 Future Needs

While "need" is a very subjective term, the definition of which appears to vary over time and among successive governments, this study attempts to distinguish between the need for rail passenger service in communities that are served by competing modes, and need for these services in certain remote communities which are forced to rely almost entirely on rail service.

As evidenced by the data in Chapter 2, the financial burden of rail passenger services provided in "remote" communities is relatively small in relation to the total level of subsidy for rail passenger service on a national basis (accounting for about 17 percent of total subsidies). Moreover, some level of transcontinental rail passenger service appears to have intrinsic values related to national unity and the promotion of tourism which fall outside the realm of any basic transportation need. For these reasons, the analysis has concentrated primarily on assessing the need for rail passenger services on many corridor and regional routes where accessibility to the communities served is also provided by bus and/or air service.

In Section 2.4 of this report, a conceptual approach is developed to examine the need for rail passenger services in communities served by competing modes. This approach involves comparing a variety of service attributes, such as frequency of service, travel time, and fares, which provide a basis for examining the extent to which specific communities might be disadvantaged either by the withdrawal of rail passenger services or the pricing of these services to achieve higher cost recovery (such as those suggested in proposed new rail passenger legislation).

As noted previously, there are a number of practical difficulties associated with the application of this conceptual approach, related largely to the problems of intermediate communities that lie along rail routes not served by other modes, and to the problem of comparisons based on fares as opposed to real costs. Nevertheless, for many of the corridor and regional VIA rail routes which are the primary subject of the present study,

comparisons of relative service attributes do reveal some interesting information.

Based on material presented in Chapters 3 through 6, a summary of competing modal characteristics for a number of VIA rail routes is presented in Exhibit 7.1. The routes shown are essentially those discussed in preceding chapters for which reasonable competition is provided by alternative modes of intercity passenger travel.

For each rail route, fares, travel times, and service frequencies are tabulated for rail, bus, and air services, where applicable. (The wide variation and frequent changes in available air fares suggest that the airfares shown in Exhibit 7.1 are probably the least representative in relative terms.) Because, as noted previously, policy statements regarding the need for rail service are strongest in the case of service to remote communities and transcontinental services, these comparisons of the data for corridor services and selected regional services provide the best examples of where the need for rail service can be addressed in more objective terms.

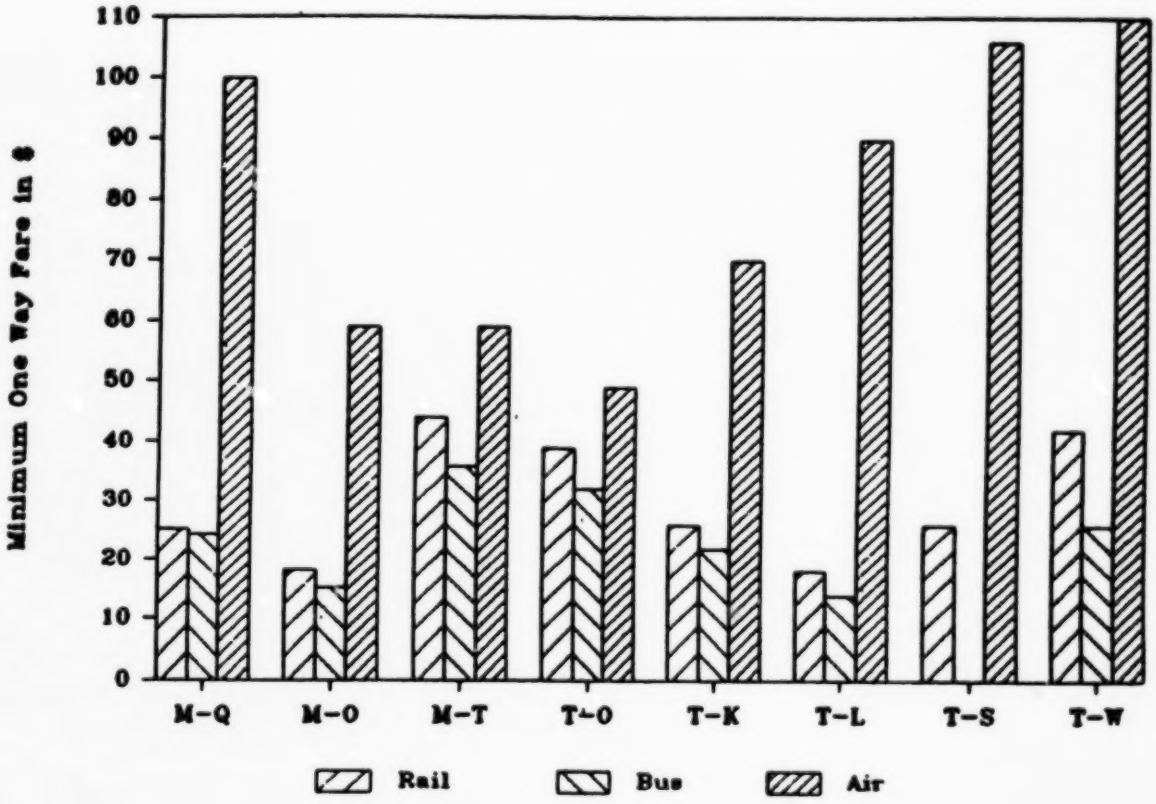
Service attributes of the three modes for selected corridor origins and destinations are compared in Exhibits 7.2 through 7.4 in terms of schedule frequencies, fastest travel times and, lowest one way fares. For these examples, the problem of service to intermediate points is of only minor significance since, in most cases, bus services parallel the routes operated by VIA Rail. From the summary data of Exhibit 7.1, it is also possible to compare competitive service attributes in terms of frequencies, travel times, and fares on a number of regional VIA routes, as shown in Exhibits 7.5 through 7.7. Here, service to intermediate points is, in some cases, more problematic.

For all of the corridor examples shown, fastest travel times by bus or air are less than six hours, which appears to be a reasonable limit before comfort (and possibly the availability of food and beverage services)

Exhibit 7.1

Comparison of Rail, Bus and Air Service Characteristics for Selected Origin-Destinations

Route	Legend	Weekly Frequency (trips)			Minimum Time (Hours)			Minimum Fare ($)		
		Rail	Bus	Air	Rail	Bus	Air	Rail	Bus	Air
Montreal-Quebec	M-Q	82	349	130	2.8	3.1	0.7	25.00	24.25	100
Montreal-Ottawa	M-O	72	262	234	2.1	2.3	0.6	18.00	14.95	59
Montreal-Toronto	M-T	108	69	360	4.8	6.8	1.1	44.00	35.70	59
Toronto-Ottawa	T-O	52	138	337	4.1	4.5	0.9	39.00	32.00	49
Toronto-Kingston	T-K	188	144	64	2.2	3.0	0.8	26.00	21.95	70
Toronto-London	T-L	193	202	108	2.3	2.3	0.6	18.00	13.80	90
Toronto-Sarnia	T-S	56	-	43	3.3	-	0.8	26.00	-	106
Toronto-Windsor	T-W	68	116	96	4.2	5.0	0.8	42.00	25.75	110
Halifax-Yarmouth	H-Y	14	28	14	5.4	5.3	0.7	26.00	21.50	100
Halifax-Sydney	H-S	16	56	62	6.8	6.8	0.7	32.00	24.75	107
Halifax-St. John	H-St.J	28	28	60	6.5	5.5	0.7	32.00	25.00	93
Moncton-Edmonton	M-E	6	28	-	4.5	7.8	-	31.00	33.20	-
Moncton-Campbellton	M-C	28	14	-	3.7	7.0	-	25.00	24.00	-
Victoria-Courtenay	VIC-C	14	56	-	4.5	4.5	-	8.70	8.00	-
Toronto-North Bay	T-NBAY	30	86	67	5.3	4.5	0.8	28.00	28.85	108
Toronto-Havelock	T-HLK	14	28	-	3.4	2.6	-	17.00	16.95	-
Calgary-Edmonton	C-E	26	322	295	3.2	3.5	0.7	27.00	17.00	72



Legend

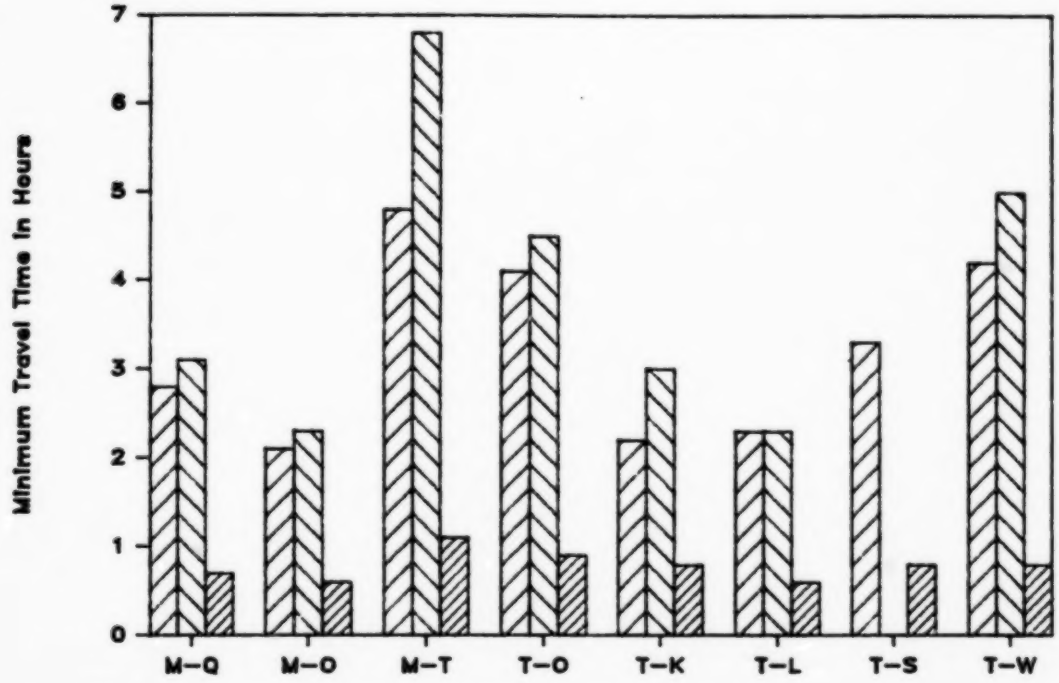
K Kingston
L London
M Montreal
O Ottawa
Q Quebec
S Sarnia
T Toronto
W Windsor

Exhibit 7.2

Comparison of Selected Corridor One Way Fares

Exhibit 7.3

Comparison of Selected Corridor Minimum Travel Times



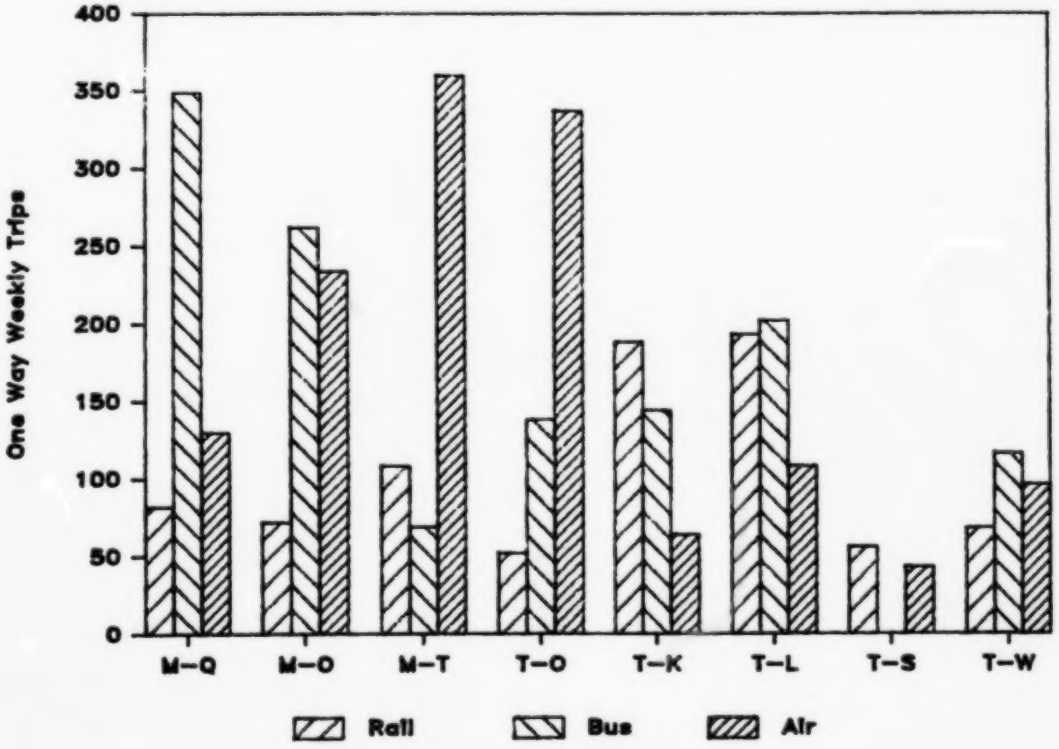
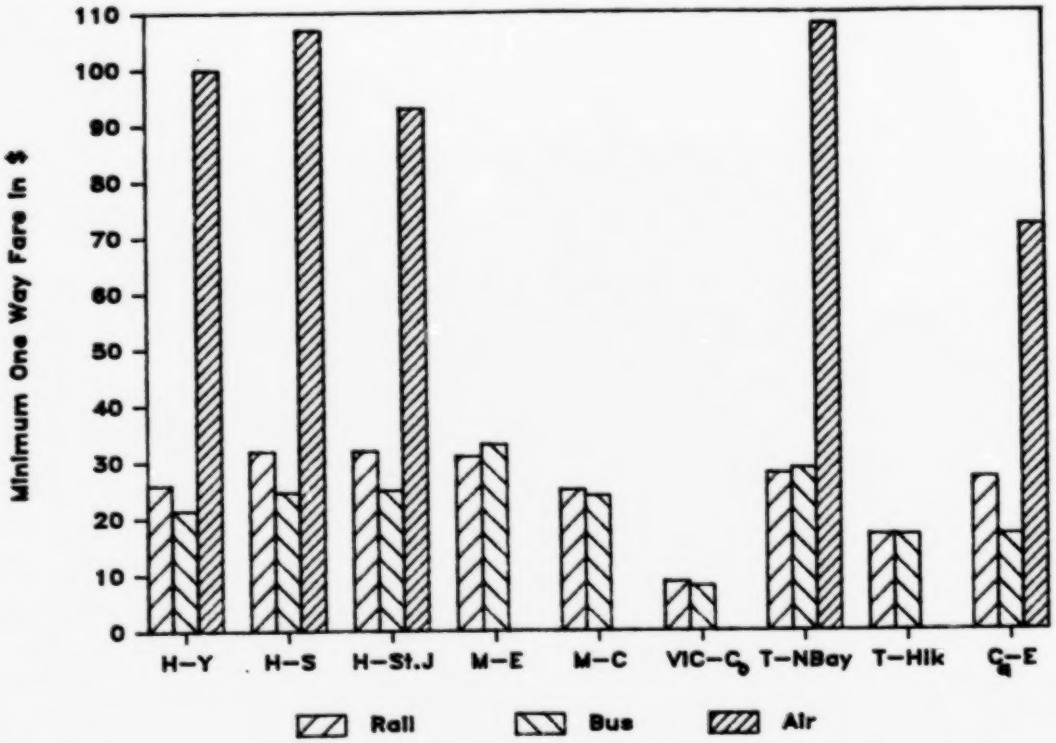


Exhibit 7.4

Comparison of Selected Corridor Frequencies



Legend

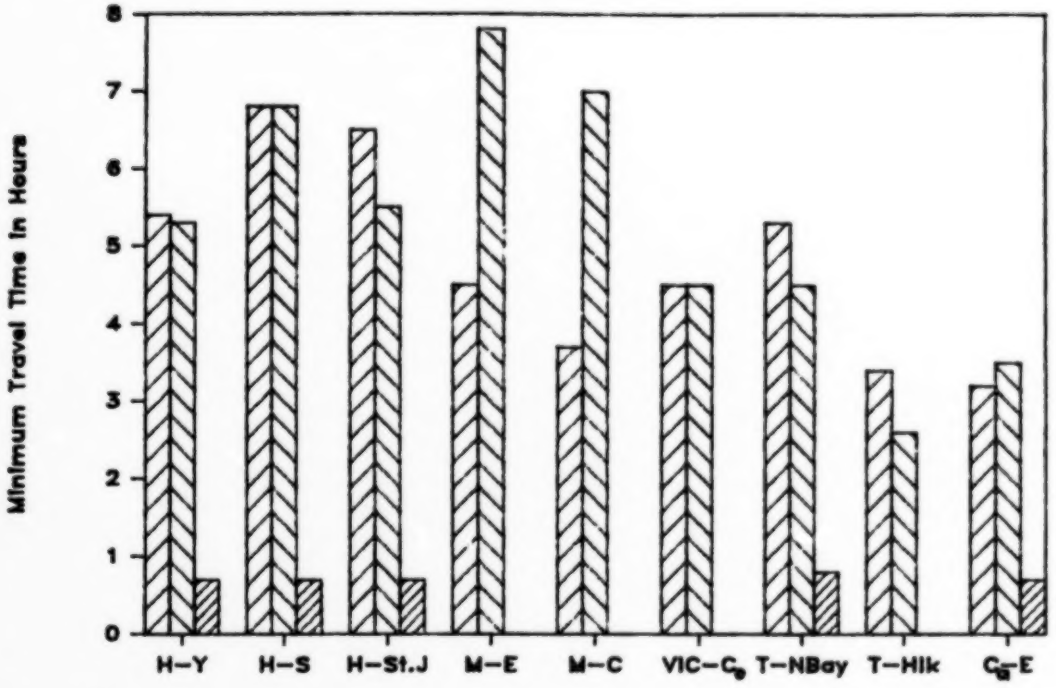
C	Campbellton
C_a	Calgary
C_o	Courtenay
E	Edmonton
E_d	Edmunston
H	Halifax
H_{lk}	Havelock
M	Moncton
N Bay	North Bay
S	Sydney
St.J	Saint John
T	Toronto
Vic	Victoria
Y	Yarmouth

Exhibit 7.5

Comparison of Selected Regional One Way Fares

Exhibit 7.6

Comparison of Selected Regional Travel Times



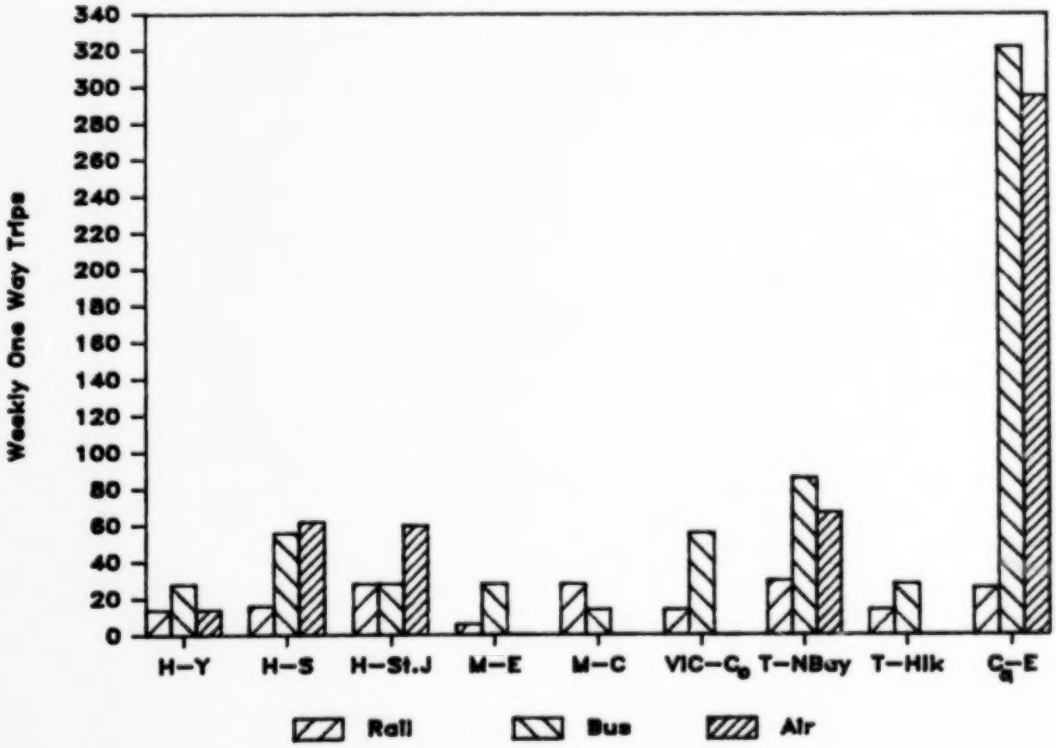


Exhibit 7.7

Comparison of Selected Regional Frequencies

becomes an important consideration in bus-rail comparisons. (At higher bus fares, which would undoubtedly result from any increase in rail fares required to achieve targeted cost recovery ratios, of course, rail advantages with respect to comfort and onboard services are likely to diminish because of service improvements that could then be justified by the bus operators.)

With respect to the conceptual approach developed above, clearly, all the corridor services fall within the category of "no need" for public subsidy because some combination of faster, more frequent, or comparably priced service attributes are available by either bus or air. While there is presently no direct bus service between Toronto and Sarnia, such service could easily be provided in response to opportunities that might arise from an increase in VIA fares (to achieve higher cost recovery) or reductions in VIA service. Thus, the recently proposed legislation that requires VIA to achieve 100 percent cost recovery (however costs are determined) on these routes is entirely consistent with this approach to the appraisal of need.

As compared to the corridor examples, the regional origin-destination pairs present a different picture with respect to airline competition. Due to the lower traffic densities involved, airline service is generally characterized by higher relative fares and, in the case of Moncton-Edmunston, Moncton-Campbellton, and Victoria-Courtenay, the absence of airline service. The nature of the road networks (relatively few multi-lane highways in comparison to the corridor examples) also means that average bus speeds are generally lower than in the corridor examples. However, bus speeds are generally still competitive, or better than rail speeds in the majority of cases (except for Moncton-Campbellton and Moncton-Edmundston routes, where no express bus service is provided).

In contrast with the corridor examples, therefore, these regional examples illustrate cases where the rationale for subsidies proposed in the new legislation must be seriously questioned. They are all relatively short routes where bus travel is generally superior from the standpoint of fares and frequency of service, and comparable in terms of travel time. More-

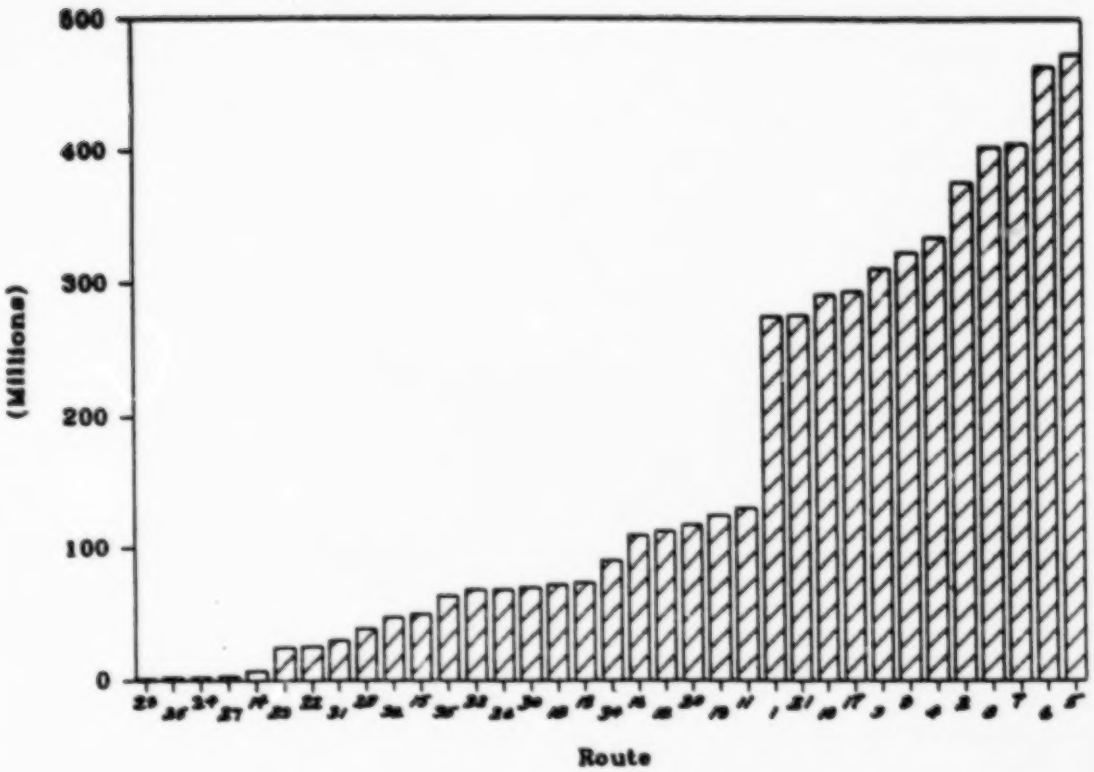
over, there are no practical difficulties related to providing service to points along each route. Although frequency of air service, as, for example, between Halifax and Yarmouth, is not comparable to the frequency of air service now provided on some of the corridor routes of similar length, such as Toronto-Windsor, with increasing airline deregulation, there is a strong possibility that local air service will be developed to serve these markets at lower fares.

Thus, even before real cost differences (as opposed to fare differences) are taken into account, rail subsidies for these examples could be eliminated (or, at least reduced substantially to levels that might be comparable to any hidden indirect subsidies for airline and bus passengers) without adversely affecting the accessibility of any of the communities served by these routes.

7.3 Subsidy Implications

The potential impact of the proposed rail passenger legislation on subsidy requirements can be illustrated by examining the data on VIA Rail costs and revenues for 1984, the only year for which detailed financial information is available. Exhibit 7.8 shows the cumulative subsidies for all services in operation during 1984, ranked according to cost recovery ratios. In this ranking, in general terms, the most "needed" services are those in remote areas which generally appear in the left portion of the diagram. The least needed corridor services account for the large increase in cumulative subsidies that emerge on the right hand side of the diagram.

Exhibit 7.9 shows the cumulative subsidies that would have resulted from applying the cost recovery targets of the proposed new rail passenger legislation, to the full costs of the 1984 services. For the corridor services, where a cost recovery target of 100 percent is defined, all subsidies are eliminated. In the case of regional and transcontinental services, subsidies are calculated on the basis of 40 percent and 60 percent cost recoveries respectively. For the remote services, the subsidies shown in Exhibit 7.8 are retained. In all cases, both VIA costs and railway charges are assumed to

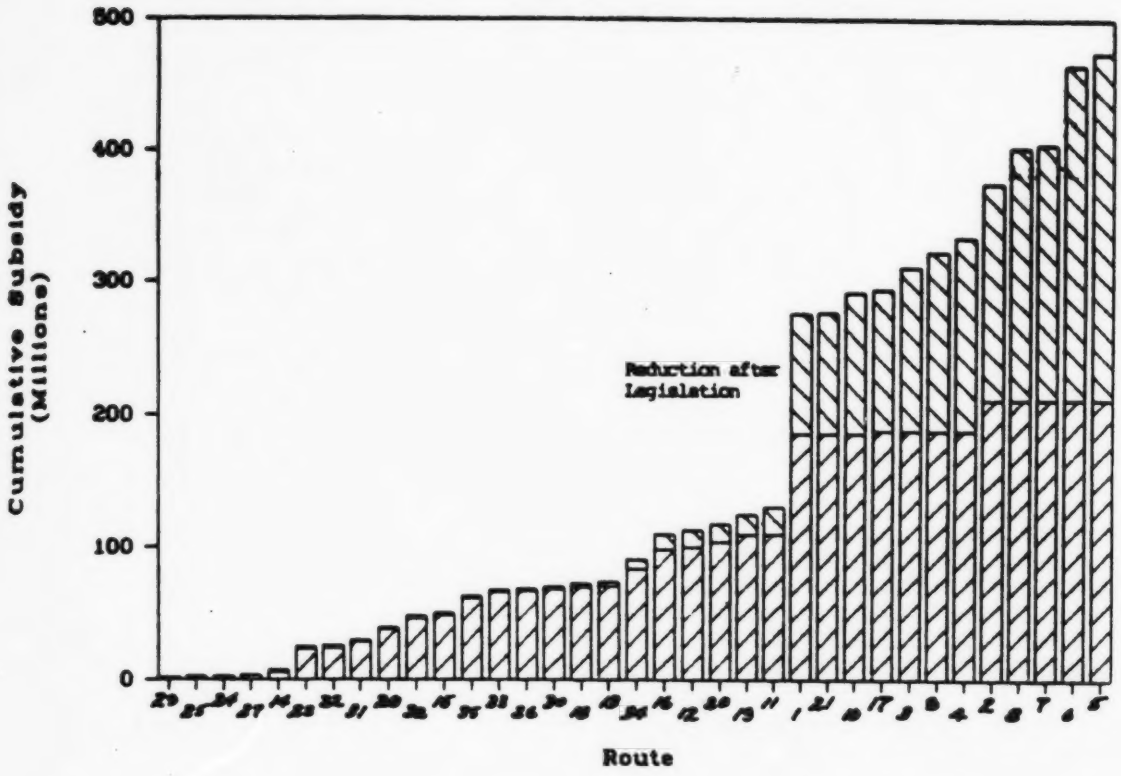


LEGEND

1	Montreal-Vancouver
2	Montreal-Halifax
3	Montreal-Quebec
4	Montreal-Ottawa
5	Ottawa-Toronto
6	Toronto-Montreal
7	Toronto-Kingston
8	Toronto-Windsor
9	Tor.-Strat.-London
10	Toronto-Sarnia
11	Toronto-Niagara Falls
12	Calgary-Edmonton
13	Victoria-Courtenay
14	Winnipeg-Saskatoon
15	Saskatoon-Edmonton
16	Montreal-Gaspe
17	Halifax-Yarmouth
18	Moncton-Campbellton
19	Halifax-Sydney
20	Halifax-St. John-Fredericton
21	Moncton-Edmundston
22	The Pas-Lynn Lake
23	Winnipeg-Churchill
24	Churchill-Wabowden
25	Thunder Bay-Sioux Lookout
26	Parlane-Winnipeg
27	Sudbury-White River
28	Capreol-Winnipeg
29	Hearst-Nakina
30	Ottawa-Sudbury
31	Montreal-Chicoutimi
32	Montreal-Cochrane
33	Edmonton-Prince Rupert
34	Winnipeg-Edmonton-Pr. Rupert
35	Toronto-Kapuskasing

Exhibit 7.8

1984 Cumulative VIA Rail Subsidies by Route



LEGEND

1	Montreal-Vancouver	19	Halifax-Sydney
2	Montreal-Halifax	20	Halifax-St. John-Fredericton
3	Montreal-Quebec	21	Moncton-Edmundston
4	Montreal-Ottawa	22	The Pas-Lynn Lake
5	Ottawa-Toronto	23	Winnipeg-Churchill
6	Toronto-Montreal	24	Churchill-Wabowden
7	Toronto-Kingston	25	Thunder Bay-Sioux Lookout
8	Toronto-Windsor	26	Farlane-Winnipeg
9	Tor.-Strat.-London	27	Sudbury-White River
10	Toronto-Sarnia	28	Capreol-Winnipeg
11	Toronto-Niagara Falls	29	Hearst-Nakina
12	Calgary-Edmonton	30	Ottawa-Sudbury
13	Victoria-Courtenay	31	Montreal-Chicoutimi
14	Winnipeg-Saskatoon	32	Montreal-Cochrane
15	Saskatoon-Edmonton	33	Edmonton-Prince Rupert
16	Montreal-Gaspe	34	Winnipeg-Edmonton-Pr. Rupert
17	Halifax-Yarmouth	35	Toronto-Kapuskasing
18	Moncton-Campbellton		

Exhibit 7.9

Comparison of 1984 Cumulative Subsidies with Proposed Legislation

remain unchanged at their 1984 levels. On this revised basis, the cumulative rail passenger subsidy declines from the 1984 level of $474 million to $215 million.

The data of Exhibit 7.9 give some indication of where reductions in subsidy levels would be achieved with respect to specific routes and according to the intent of the proposed legislation. In fact, they are unrealistic, because by assuming VIA costs and allowable railway charges remain unchanged, cost recovery targets could only be achieved through revenue increases. Revenue increases, of course, reflect fare levels and ridership, both of which are interrelated, and it is highly unlikely that the fare increases implied by the cost recovery targets would lead to the necessary increase in revenues.

To illustrate these points, summary data are presented in Exhibit 7.10 for the four classes of VIA Rail services for four cases, namely, actual 1984 information shown previously, and three alternative scenarios for cost recovery.

Scenario 1, as described above and shown in Exhibit 7.8, is based on cost recovery targets applied to the full 1984 costs as approved by the CTC under CTC Cost Order R-6313. To achieve these targets, however, total revenue would have to increase from $168 million to $428 million, an increase of 154 percent, the largest portion of which would come from the totally unsubsidized corridor services. Such increases in revenue appear highly unlikely in view of the price elasticity of demand for rail service. Alternatively, some combination of fare increases and cost reductions (both VIA and railway costs) would be necessary to eliminate the large gap between subsidies and revenues required to achieve the cost recovery targets.

Thus, rather than attempting to obtain the entire subsidy reduction from passengers, Scenario 2 assumes that allowable railway charges are reduced to specific costs that are attributable to a service and which would

Exhibit 7.10

Comparison of 1984 Subsidy and Revenue Requirements Under Alternative Cost Recovery Scenarios

Item	1984 Actual	Scenario 1	Scenario 2	Scenario 3
VIA Costs				
Transcontinental	120.0	120.0	120.0	72.0
Corridor	88.5	88.5	88.5	53.1
Regional	19.5	19.5	19.5	11.7
Remote	30.9	30.9	30.9	18.5
Sub Total	258.9	258.9	258.9	155.3
Railway Charges				
Transcontinental	128.6	128.6	77.2	77.2
Corridor	156.2	156.2	93.7	93.7
Regional	39.9	39.9	23.9	23.9
Remote	59.1	59.1	35.5	35.5
Sub Total	383.8	383.8	230.3	230.3
Total Costs				
Transcontinental	248.6	248.6	197.2	149.2
Corridor	244.7	244.7	182.2	146.8
Regional	59.4	59.4	43.4	35.6
Remote	90.0	90.0	66.4	54.0
Sub Total	642.7	642.7	489.2	385.6
Total Subsidy	474.5	214.5	160.7	124.4
Required Revenue	168.2	428.2	328.5	261.2
% Increase	na	155	95	55

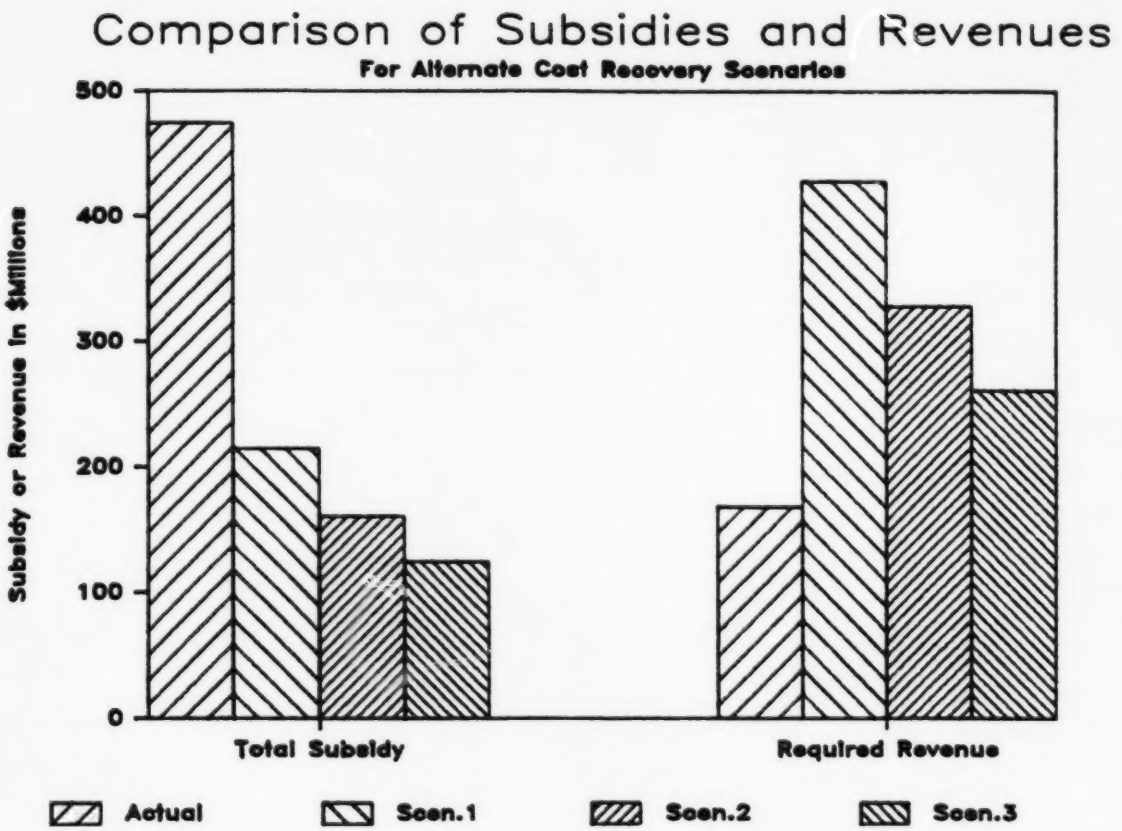
not be incurred by the railways if that service ceased to operate. In other words, they are avoidable costs as opposed to fully allocated costs currently allowed by the CTC. This approach is actually consistent with the wording of the proposed legislation, the implication being that, although legal, railway charges for VIA services have been excessive. Any other interpretation implies that the government intends to improve the financial performance of VIA at the expense of the railways.

Although there are no public data on the avoidable costs of rail passenger services, it has been suggested they represent about 60 percent of fully allocated costs. Thus for Scenario 2, only 60 percent of the railway charges for 1984 have been added to VIA's unchanged costs to arrive at subsidy estimates consistent with the cost recovery targets. In this case, the subsidy is reduced to $161 million requiring a corresponding revenue increase of 95 percent, from $168 to $328 million.

Even for the reduced railway charges assumed under Scenario 2, VIA revenues would have to double, on average, in order to meet the cost recovery targets. Revenue increases of this magnitude appear highly unlikely since, in many cases, VIA services would be priced well above the fares for competing modes (including air). As a result, the proposed cost recovery targets are only likely to be met by a combination of cost reduction (including VIA costs) and fare increases.

Previous sections of this report suggest cost reductions that could be achieved, particularly for the corridor and regional routes, if VIA's bargaining position with the railways were to be improved and if VIA were to increase its own efficiency by eliminating unnecessary overheads. For these reasons, a third cost recovery scenario is defined in Exhibit 7.10 which reduces both VIA costs and railway charges to 60 percent of the actual 1984 figures. Under an improved bargaining position, of course, reductions in railway charges should result not only from changing the definition of permissible charges (from those permitted under the Costing Order to avoidable costs), but by reductions in the actual avoidable costs themselves.

Exhibit 7.11


Comparison of Subsidies and Revenues
For Alternate Cost Recovery Scenarios
Subsidy or Revenue in $Millions
500
400
300
200
100
0
Total Subsidy
Required Revenue
Actual
Scen.1
Scen.2
Scen.3

progress, this combination of cost recovery ratios and possible service discontinuance does create opportunities for modification to the system by which VIA and the railways allocate costs to the various services provided.

Moreover, the proposed legislation suggests that where VIA fails to meet cost recovery objectives, higher subsidies may be allowed if VIA's projections indicate that there is a likelihood of achieving the required cost recovery in future years. Recent experience shows that VIA has been overly optimistic in its projections of future traffic growth, particularly when these projections are compared to actual ridership counts. For example, in a recent study concerned with Union Station in Toronto, VIA Rail provided projections that show traffic increases of between 350 percent and 450 percent over the next 15 years. That same report, however, shows that current VIA ridership at Union Station is 60 percent below projections made by VIA some ten years ago.[1]

In summary, therefore, the potential savings in federal government subsidies to VIA Rail that have been identified above must be qualified. Changes in cost allocation procedures could result in a situation where savings in subsidies, resulting from the strict application of cost recovery targets on some routes, are compensated by more than proportional increases in subsidies for routes where cost recovery requirements are not applied. In addition, even where cost recovery targets are not achieved, subsidies might continue at higher levels because of overly optimistic projections about the future. Finally, it must be recognized that, based on 1984 data, a sizeable portion of the savings (about $154 million) "extracted" from the railways. In this regard, the implication is that either railway charges have been excessive in the past and that in terms of real costs, VIA's financial performance is better than the data suggest, or alternatively, that the government intends to transfer some of the burden of rail passenger losses back to the railways.

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1 CANAC Consultants Ltd., Toronto Terminals Railway Capacity Study (September, 1985)

7.4 Conclusions

The analysis carried out in this study represents a first step towards a more systematic assessment of public need. For purposes of illustration, some of the financial implications of this analysis are used to give an indication of the nature of those changes that require further consideration and the magnitude of the savings that are possible without any measurable deterioration in the accessibility in communities now served by the rail passenger services.

With respect to the proposed new legislation, the analysis confirms the appropriateness of eliminating all rail passenger subsidies in the urbanized areas of southern Ontario and Quebec, where a wide variety of intercity transportation services are available that provide a complete range of level of service attributes.

However, this preliminary assessment of need also suggests that some of the services defined to be "regional" in nature, particularly in Atlantic Canada, where the federal government proposes to maintain subsidies of at least 60 percent of costs, could also be required to meet full cost recovery without any serious impact on the accessibility of communities now served by those routes. Alternative bus services are available that provide comparable levels of service, and there is a strong likelihood that a greater variety of airline services will emerge as a result of deregulation. The implicit suggestion, therefore, is that by treating some of these regional services in the same manner as the corridor services, rail subsidies could be eliminated altogether on these routes, thereby reducing the maximum level of subsidy paid by the federal government from the proposed limit of $400 million.

These estimated savings should not be interpreted as the result of discontinuance of rail passenger service because, as shown in the preceding chapters, there are significant opportunities for both cost reduction and revenue increases which should enable many of these services to operate on a full cost recovery basis. The estimated savings simply indicate where

federal government funding can be reduced because of the absence of any real public need for continuation of these subsidies.

The study also suggests that for those remaining services that would be eligible for subsidy, namely the transcontinental services and a number of regional and remote services, there are further opportunities for improving financial performance by increasing revenue and eliminating unnecessary overheads. At this point, however, the magnitude of the potential savings with respect to these services remains somewhat speculative due to the lack of more detailed data and information.

Based on comparisons of 1984 route specific subsidies with and without the proposed cost recovery targets, the analysis suggests some degree of inconsistency between the established limit on total subsidies ($400 million) and the total obtained from application of the cost recovery principles under the various scenarios. Some of this difference can be explained by subsidy requirements for additional services reinstated since 1984 and new capital investment to improve service. However, it is important to ensure that the availability of funds as opposed to improved efficiency, does not dictate needed improvements in the cost efficiency and financial performance of those routes that remain within the subsidized network.

The analysis also suggests a number of directions for further study. First, for those regional routes where it has been suggested that rail subsidies be eliminated entirely, the analysis has been based on a consideration of terminal origins and destinations only. To ensure that the analysis does not discriminate against intermediate communities, it would be useful to simulate the actual rail service between terminals, including all intermediate stops, in terms of full cost comparisons for rail and equivalent bus service.

Second, for some of the regional services in Atlantic Canada, the costs of potential new air services resulting from airline deregulation should be compared with the full costs of rail service. Bus service in terms of

frequency and travel time is already generally comparable to rail service and any increase in airline frequency or lowering of fares would further reduce the need for rail subsidies.

Finally, for the remote services for which no cost recovery targets have been established (for example, northern Manitoba) and for certain regional services (for example, Gaspe-Matapedia), more detailed analysis of air and bus substitutions that might improve accessibility at lower public and user cost should be carried out.